GAS

ENGINEERING • UTILIZATION • LOAD-BUILDING • MANAGEMENT

The EMCO "1001" REGULATOR has a PILOT LOADING SYSTEM for Sensitive Diaphragm Control ...

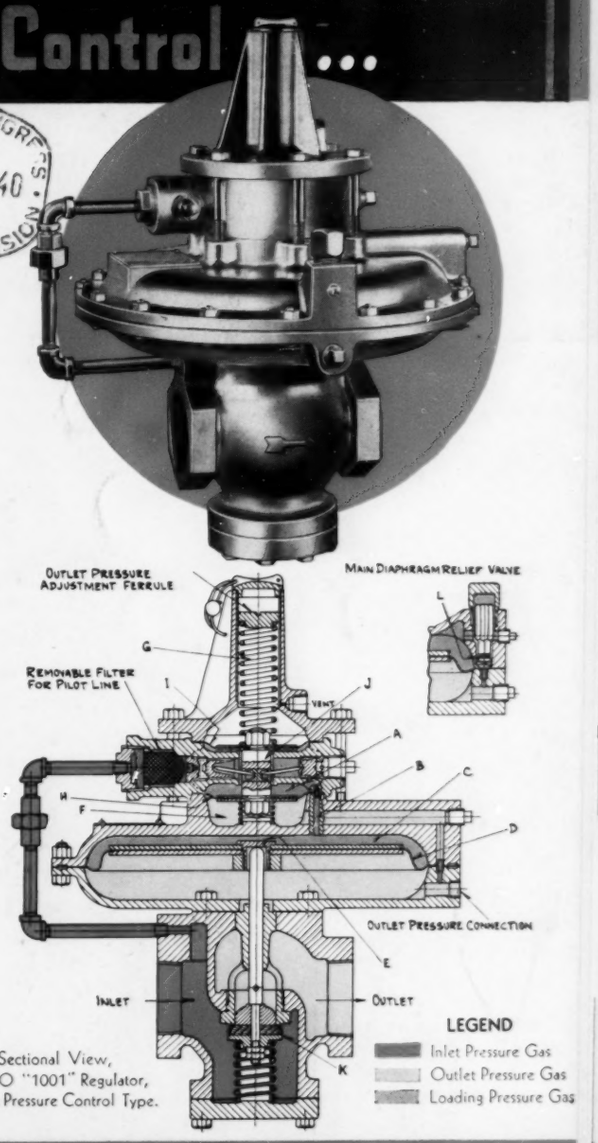
LIBRARY OF CONGRESS DEC 12 1940 GENERAL DIVISION

The excellent performance characteristics of the EMCO "1001" Regulator are due to the inbuilt pilot loading system for diaphragm control. This method of loading, not previously available on medium and small size regulators, assures the movement of the main operating diaphragm with the slightest change in the control pressure. The desired outlet pressure is maintained at a definite and unvarying amount from minimum flow rates to the maximum capacities that can be obtained under existing pressure conditions and lock-up features are exceptional.

This regulator is designed to provide accurate control for installations having both small and large flow rates, where supply pressures ranging up to 150 lbs. must be reduced to 20 lbs. or less. In this category are large gas appliances, boiler plants and industrial heat-treating furnaces. The EMCO "1001" Regulator is also well suited to small town border station requirements and may also be employed for district regulator installations where systems are operated at intermediate pressures or at intermediate and low pressure combined.

A comprehensive bulletin, No. 1059, making use of four-color sectional diagrams to illustrate the operating principle, will be sent upon request.

- ***EXTREME ACCURACY OF CONTROL . . .***
  Precision control now possible for the first time for utilization pressures normally encountered on industrial gas applications.
- ***COMPLETE ADAPTABILITY . . .***
  Covers practically all the regulation problems met with in normal gas practice.
- ***COMPACT DIMENSIONS . . .***
  Provides simple installation with respect to both space and connections.
- ***WIDE RANGE OF CONTROL . . .***
  Extreme accuracy now obtainable within the same assembly for outlet pressures ranging from 3 inches of water up to 20 lbs. per sq. in.



Sectional View, EMCO "1001" Regulator, Outlet Pressure Control Type.

PITTSBURGH EQUITABLE METER COMPANY
MERCO NORDSTROM VALVE CO.
NEW YORK · BUFFALO · PHILADELPHIA · KANSAS CITY · TULSA · LOS ANGELES
Main Offices - PITTSBURGH, PA.
DES MOINES · CHICAGO · COLUMBIA · MEMPHIS · OAKLAND · HOUSTON

AUGUST 1940 ◆ ◆ 25 CENTS

Proved in principle and practice

Mechanical joint cast iron pipe is double-checked by principle and practice. The pipe material itself has a service record of a century, even two centuries and more. The bottle-tight, stuffing-box type, mechanical joint is based on a universally accepted engineering principle. All mechanical joints, designed and made by C. I. P. R. A. members, are based on this time-tried principle. All are bottle-tight.

Look for the "Q-Check" registered trade mark. Cast iron pipe is made in diameters from 1¼ to 84 inches.

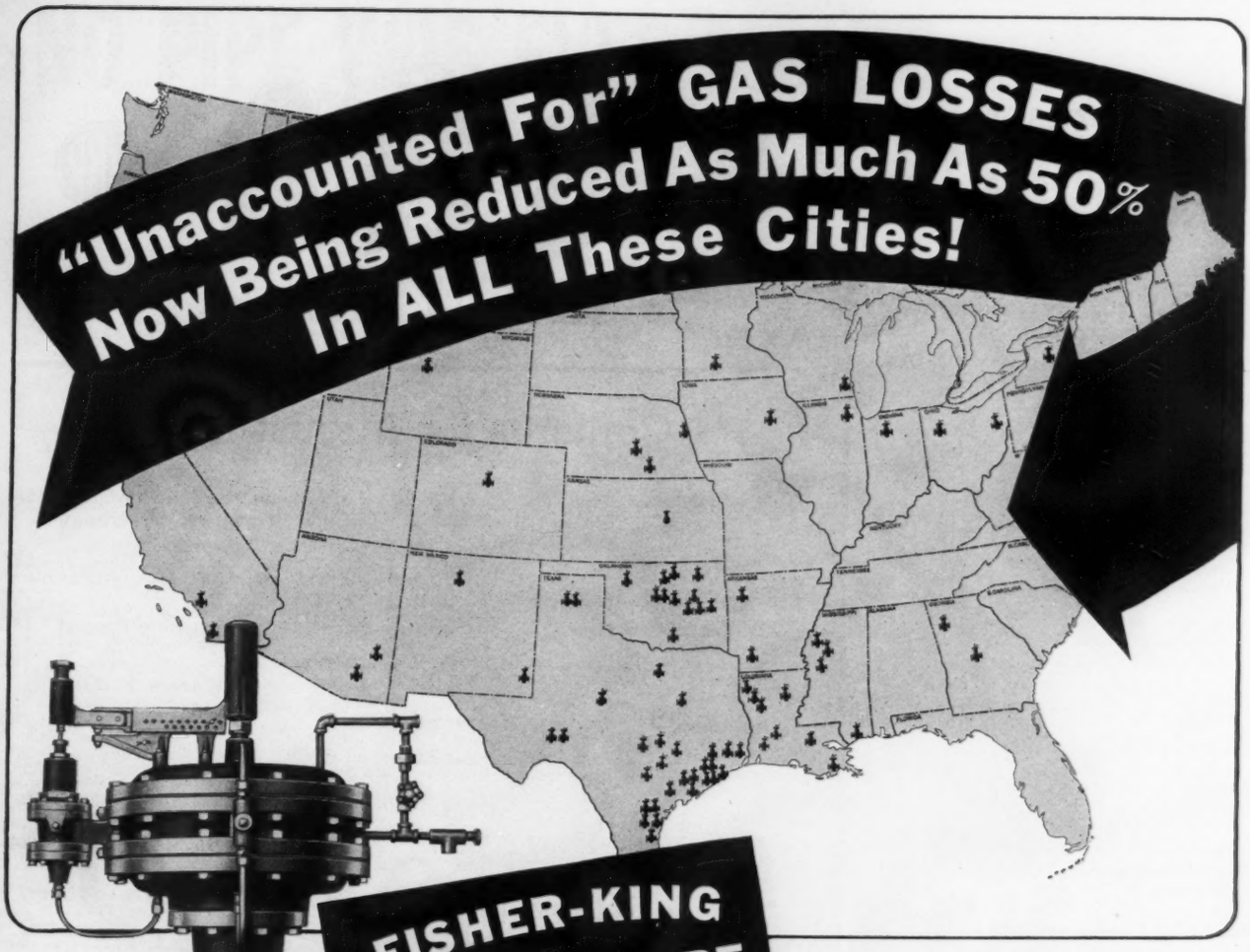
THE CAST IRON PIPE RESEARCH ASSOCIATION, THOMAS F. WOLFE, RESEARCH ENGINEER, 1013 PEOPLES GAS BUILDING, CHICAGO, ILLINOIS

CAST IRON PIPE

THE STANDARD MATERIAL FOR UNDERGROUND MAINS

Assembling any of the mechanical joints made by C. I. P. R. A. members is a simple, swift operation with unskilled labor and a wrench. These joints differ in design but all are based on the bottle-tight stuffing-box principle.

"Unaccounted For" GAS LOSSES Now Being Reduced As Much As 50% In ALL These Cities!



FISHER-KING GAS PRESSURE BOOSTER

In less than two years FISHER-KING Gas Pressure Boosters have been installed in all cities shown on the map above. Each regulator on the map indicates an installation of one or more Boosters. Since their original purchases almost one-half of the companies have *re-ordered* two to eight more of these automatic regulators. Here's why:

FISHER-KING Gas Pressure Boosters *automatically* maintain a constant pressure at the low pressure point in the distribution system. Enables system pressure to be lowered 25% to 50% with corresponding reduction in "unaccounted for" gas.

Excessive costs of manually adjusting lever and weight regulators and the uncertainty of such adjustments are entirely eliminated.

Customer complaints are reduced and good will improved because pressures are accurately maintained in accordance with the demand.

Fisher engineers will gladly show you how savings in "unaccounted for" gas and economies in operation costs will pay for your Booster installation in 30 to 60 days.

WRITE TODAY for FREE Catalog 38 containing complete details on FISHER-KING Gas Pressure Boosters.

FISHER GOVERNOR COMPANY

806 FISHER BLDG. **MARSHALLTOWN, IOWA**

Advertisers

American Cast Iron Pipe Co. ..
American Meter Co. 14
American Radiator & Standard Sanitary Corp. 65
American Stove Co. ..

Barco Manufacturing Co. ..
The Barrett Co. 6
H. R. Basford Co. 62
Blaw-Knox Co. 7
Bundy Tubing Co. 63

Carbide & Carbon Chemicals Corp. ..
Cast Iron Pipe Research Ass'n Second Cover
The Chaplin-Fulton Manufacturing Co. 55
The Cleveland Trencher Co. 57
Condensation Engineering Corp. 58
Connelly Iron Sponge & Governor Co. 60
The Cooper-Bessemer Corp. ..
Crane Co. ..
Cribben & Sexton Co. ..

Dearborn Chemical Co. 10
Detroit-Michigan Stove Co. ..
Dresser Manufacturing Co. ..

Fisher Governor Co. 1
Fraser Furnace Co. 62

Gasair Corp. 66
The Gas Machinery Co. 64
General Controls 12
General Gas Light Co. 57
Glo-Fire Co. ..
James Graham Manufacturing Co. 37
Greenlee Tool Co. 59
B. F. Grizzle ..

Handbook Butane-Propane Gases, Revised Second Edition 55
Harper-Wyman Co. 49, 50
Howle Co. ..

Jacobs Wind Electric Co. 61
Johns-Manville 31

Kitson Co. ..

Merco Nordstrom Valve Co. ..
Milwaukee Gas Specialty Co. 62
Minneapolis-Honeywell Regulator Co. ..
Mueller Co. Third Cover
L. J. Mueller Furnace Co. ..

The National Supply Co. 8, 9
National Tube Co. 3

Pacific Gas & Electric Co. 47
Pacific Gas Radiator Co. 61
Pacific Meter Works ..
Payne Furnace & Supply Co., Inc. 48
Peerless Manufacturing Co. ..
Philgas Dept., Phillips Petroleum Co. 4
Pittsburgh Equitable Meter Co. Front Cover

Reliance Regulator Corp. 11
Republic Steel Corp. 5
Reynolds Gas Regulator Co. 63
Robertshaw Thermostat Co. ..
Geo. D. Roper Corp. 39

Semet-Solvay Engineering Corp. 58
Servel, Inc., Electrolux Sales Division 35
Sharples Solvents Corp. ..
M. B. Skinner Co. ..
Spencer Thermostat Co. 64
The Sprague Meter Co. Fourth Cover

U. S. Pipe & Foundry Co. ..
United States Steel 3

The Vent-A-Hood Co. ..

Ward Heater Co., Ltd. 40
Worthington Pump & Machinery Co. ..

John Zink Burner Co. 59

GAS

REG. U. S. PATENT OFFICE

Sixteenth Year of Publication

Contents for August 1940

GUEST EDITORIAL: The New York World's Fair Unites the Industry..... 13
By N. T. Sellman

Thermally Thinking 15

PIPE LINE AND DISTRIBUTION:

Michigan Gas Transmission Corporation's 55-Mile Loop Line Project 16

Radio Communication — Its Use in Gas Dispatching..... 17
By Warren T. Bulla

Sampling Air or Gas in Inaccessible Places.....*By W. J. Fene* 19

Compressor Pulsations — Their Effect on Orifice Meter Accuracy.... 20
By Edward Sackett

PRODUCTION AND MANUFACTURE:

Geochemical Prospecting.....*By S. E. Slipper* 24

SERVICE AND UTILIZATION:

Our Job in Dish Sterilization..... 25

A Battery Plate Drying Oven.....*By A. P. Kelso* 27

Everyone Admires a Fine Photograph.....*By Harold Ward* 29

P.U.A.A.'s Annual Convention..... 30

Ten Thousand Feet Under the Sea..... 32

The Industry's 1939 Safety Record..... 36

The Liquefied Petroleum Gas Market Expands One-Third in 1939..... 41

Sales Slants 44

Industry Personalities 46

Comes Another Wintry Night!.....*By Tom Scully* 51

Calendar of Events..... 52

The People Stopped, Looked, and Inquired.....*By Lloyd C. Thomas* 53

Oil & Gas Equipment Review..... 54

Current Reading 56

Modern Appliances 62

Publication Office: **LOS ANGELES, 1709 West Eighth Street. DRexel 4337.** ***Branches:*** **NEW YORK, 381 Fourth Avenue, MUrray Hill 4-0698. DALLAS, 3645 Haynie Ave., Phone 58-1764. CHICAGO, 1064 Peoples Gas Building, HARrison 6634.**

August, 1940. Volume XVI, Number 8. *GAS* is published monthly by Western Business Papers, Inc., at 1709 West Eighth Street, Los Angeles, California. **JAY JENKINS,** President and General Manager; **CRAIG ESPY,** Vice President; **JAMES E. JENKINS,** Secretary-Treasurer; **ARTHUR ROHMAN,** Managing Editor; **ELLIOTT TAYLOR,** Eastern Editor; **WILLIAM C. COPP,** Promotion Manager; **W. G. RUSSELL,** Field Representative. Subscription price: United States, Canada, Mexico and Central American countries (in advance), 25 cents the copy; three years for $2.00, $1.00 per year; all other countries, $3.00 per year. Entered as second class matter August 20, 1936, at the post office at Los Angeles, Calif., under the Act of March 3, 1879.

Copyright, 1940.

Member: Audit Bureau of Circulations: Associated Business Papers, Inc. *Publishers:* BUTANE-PROPANE *News;* HANDBOOK BUTANE-PROPANE GASES.

NO PIPE WAS EVER MEANT TO STAND SUCH PUNISHMENT!

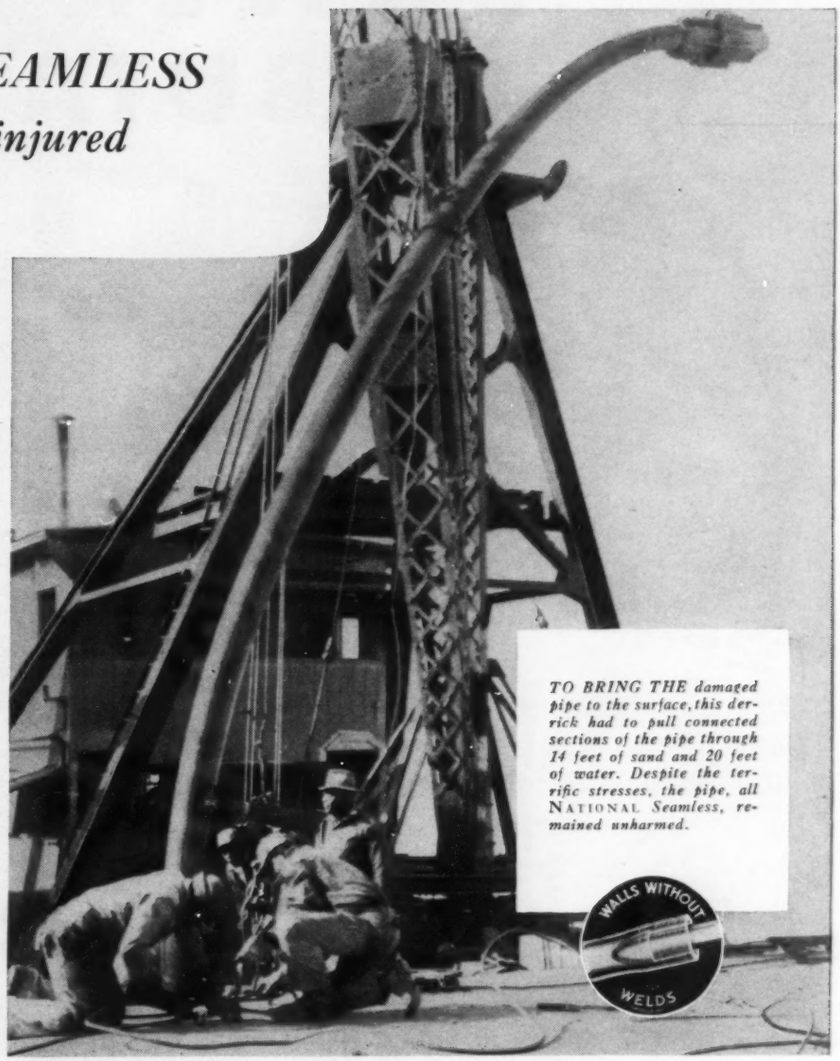
Yet NATIONAL SEAMLESS came through uninjured

ONE of the most remarkable tests of pipe stamina ever recorded is the story of a gas line crossing the Mississippi River near Onward, Miss., part of the system of Southern Natural Gas Company.

Constructed of NATIONAL Seamless Pipe (10¾" O.D. x ½" wall), this crossing was originally covered by several feet of sand. However, a change in the river current exposed one section of the pipe. It was struck and ripped open by the propeller of a large river boat.

How to repair the break and restore service as quickly as possible? That was the question which faced the operators of the line. They decided upon the most direct method. They would try to lift the pipe bodily to the surface.

A barge-mounted derrick was rushed to the scene and anchored in position. With this source of power, they seized the exposed ends and literally stripped the pipe from the bottom of the river, carrying along sections buried under *14 feet of sand and 20 feet of water.* Despite the terrific strain imposed by the method of removal, the pipe was uninjured. Repairs were quickly completed, tested, and the pipe restored to safety, well below the river bed.



TO BRING THE damaged pipe to the surface, this derrick had to pull connected sections of the pipe through 14 feet of sand and 20 feet of water. Despite the terrific stresses, the pipe, all NATIONAL *Seamless, remained unharmed.*

This is another instance showing how NATIONAL Seamless, like a thoroughbred champion, can "take it." Each length of this pipe is an homogeneous cylinder, pierced from a billet of finest quality steel, with no welds— no lines of potential weakness—"Walls Without Welds."

Wherever you want safe operation at high pressures, and maximum protection against the unexpected, use NATIONAL Seamless Pipe.

NATIONAL TUBE COMPANY

PITTSBURGH, PA.

Columbia Steel Company, San Francisco, *Pacific Coast Distributors* · United States Steel Export Company, New York

UNITED STATES STEEL

PROOF of LOWER COSTS with BUTANE-AIR

ACTUAL RECORD OF GAS PRODUCTION COSTS IN WELL-MANAGED PROPERTY BEFORE AND AFTER CONVERSION TO BUTANE-AIR

		JANUARY	FEBRUARY	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPTEMBER	OCTOBER	NOVEMBER	DECEMBER
GENERATION DATA													
24 HOUR RATED OUTPUT	MCF.	150	150	150	150	150-288	288	288	288	288	288	288	288
OUTPUT	MCF.	1,560.2	1,575.6	1,422.2	1,486.1	1,682	1,705	1,494	1,800	1,819	1,896	2,014	1,908
OIL USED	GALS.	5,979	6,260	5,301	5,779	4,185	410						
OIL USED	GALS./MCF.	3.83	3.97	3.73	3.89	3.59	4.23						
GENERATOR COAL USED	LBS.	87,474	90,426	77,691	79,867	62,667	5,437						
GENERATOR COAL USED	LBS./MCF.	56.1	57.4	54.6	53.7	53.7	56.1						
BOILER COAL USED	LBS.	53,080	54,820	43,235	49,745	38,920	4,520						
BOILER COAL USED	LBS./MCF.	34.0	34.8	30.4	33.5	33.4	46.6						
WATER USED	GALS.	189,100	211,400	189,800	199,400	196,800	215,500	133,700					
WATER USED	GALS./MCF.	121	134	133	134	169	126	89					
BUTANE USED	GALS.					2,445	8,883	7,846	9,612	9,327	10,297	11,262	9,928
BUTANE USED	GALS./MCF.						5.52	5.25	5.34	5.4	5.43	5.59	5.5
TIME OF RUN	MINUTES	4	4	4	4	4.75	4						
TIME OF BLOW	MINUTES	3	3	3	3	3	3						
MAXIMUM B.T.U.VALUE		610	610	589	590	600	584	570	570	570	570	570	570
MINIMUM B.T.U.VALUE		561	566	560	554	550	562	570	570	570	570	570	570
AVERAGE B.T.U.VALUE		578	582	571	572	573	569	570	570	570	570	570	570
COSTS													
TOTAL FUEL, OIL & BUTANE	$	681.57	742.25	572.45	633.47	624.21	582.22	440.18	513.28	484.07	504.55	686.98	391.16
NO.OF EMPLOYEES,OPERATING		3	3	3	3	5	2	0.5	0.5	0.5	0.5	0.5	0.5
TOTAL LABOR COST	$	352.46	384.30	350.32	350.59	563.35	314.23	37.77	39.89	62.08	64.76	64.66	116.50
MAINTENANCE MATERIAL	$	7.62	15.77	114.89	5.00	4.91	1.28	2.15					46.69
MISCELLANEOUS	$	48.58	70.18	39.51	63.04	72.46	46.96	38.82	35.82	45.00	16.45	45.32	29.73
TOTAL COST	$	1,090.23	1,212.50	1,077.17	1,052.10	1,264.93	944.69	518.92	588.99	591.15	585.76	796.96	584.08
PRODUCTION COST PER MCF. GENERATED													
GENERATOR COAL	CENTS/MCF.	16.48	18.79	14.18	15.74	15.73	33.11						
BOILER COAL	" "	6.32	6.46	5.40	5.95	6.69	0.16						
OIL	" "	19.01	19 19.71	18.52	18.78	17.32	48.76	1.47	28.52	26.62	26.61	34.11	20.50
WATER	" "	1.89	2.15	2.16	2.15	2.71	2.02	27.99	28.52	26.62	26.61	34.11	20.50
BUTANE	" "					25.02	29.11	29.46	26.62	3.11	1.96	2.15	
TOTAL FUEL COST	" "	43.68	47.11	40.25	42.63	37.11	34.15	2.36	1.90	3.28	0.30	1.25	3.95
OPERATING LABOR	" "	22.43	24.23	24.16	23.42	33.34	13.34	0.17	0.32	0.14	3.42	3.21	6.11
MAINTENANCE LABOR	" "	0.16	0.16	0.48	0.17	0.15	5.09	2.53	2.22	3.41			2.45
TOTAL LABOR COST	" "	22.59	24.39	24.63	23.59	33.49	18.43	0.14			0.87	2.25	1.56
MAINTENANCE MATERIAL	" "	0.49	1.00	8.08	0.34	0.29	0.75	2.60	1.99	2.47			
MISCELLANEOUS	" "	3.11	4.45	2.78	4.24	4.31	2.75						
TOTAL PRODUCTION COST	" "	69.88	76.95	75.74	70.80	75.20	55.41	34.73	32.72	32.50	30.89	39.57	30.61

REMARKS: BUTANE PLANT PUT INTO OPERATION MAY 9. OUTPUT: BUTANE 515 MCF. WATER GAS 1167 MCF.
JUNE OUTPUT: BUTANE 1608 MCF. WATER GAS 97 MCF.

41% SAVING

Average production costs for last six months of 1939 were 41% less than for the first four months under water gas operation. Think what a difference in *net profit!*

Others are making greater profits with Butane-air and Propane-air. Why not investigate for YOUR company? Your inquiry does not obligate you.

Philgas
DEPARTMENT
PHILLIPS PETROLEUM COMPANY
GENERAL MOTORS BUILDING, DETROIT, MICHIGAN

NEW YORK
PHILADELPHIA
CHICAGO
BARTLESVILLE, OKLA.
MILWAUKEE
ST. LOUIS
AMARILLO

THE NATION'S LARGEST MARKETER OF LIQUEFIED PETROLEUM GASES

Steel—FIRST LINE OF NATIONAL DEFENSE

Steel is essentially a peacetime industry—and America's normal appetite for steel is great.

This is fortunate for all of us.

It permits steel producers to carry on year after year and to find employment for hundreds of thousands of men.

It makes management extend itself to remain competitive—to improve its production facilities—to better the quality of its old products—through research, to devise new products—in order to win in the battle for markets that goes on apace in all industry.

Republic has done exactly that and—in the emergency now facing America—is in a position to supply more and better steel —the first line of any nation's defense.

Republic has invested millions of dollars in plants, in equipment, in research and in the training of men. Republic has expanded its ore supplies—enlarged its blast furnaces—increased open hearth and electric furnace capacity—built new mills and added new finishing equipment. But more, Republic has built an organization of men who know steel.

And now, seeing but dimly through the haze that clouds all business prophecy, but realizing our own deep responsibility, Republic, vital to peacetime prosperity, pledges its every effort to help keep America the way we know it and love it —to keep America safe for Americans—through steel, first line of national defense.

Republic Steel Corporation, Cleveland, O.

T. M. Girdler
CHAIRMAN OF THE BOARD

R. J. Wysor
PRESIDENT

BURY the PROBLEM of CORROSION ..WITH THE PIPE

Barrett Enamels—Southern Natural Gas Co.

Barrett PIPELINE ENAMEL

BARRETT Pipeline Enamels resist water absorption, electrolysis, and soil acids and alkalis — assuring freedom from corrosion, long pipe line life.

What's more, Barrett Enamels do this vital protection job at lower initial cost.

The coating goes farther, because the composition includes a maximum percentage of coal-tar pitch. Application is easier, too, because of the high flowability.

Remember, durable Barrett Enamels are made of the most stable bituminous substance known for pipe line protection.

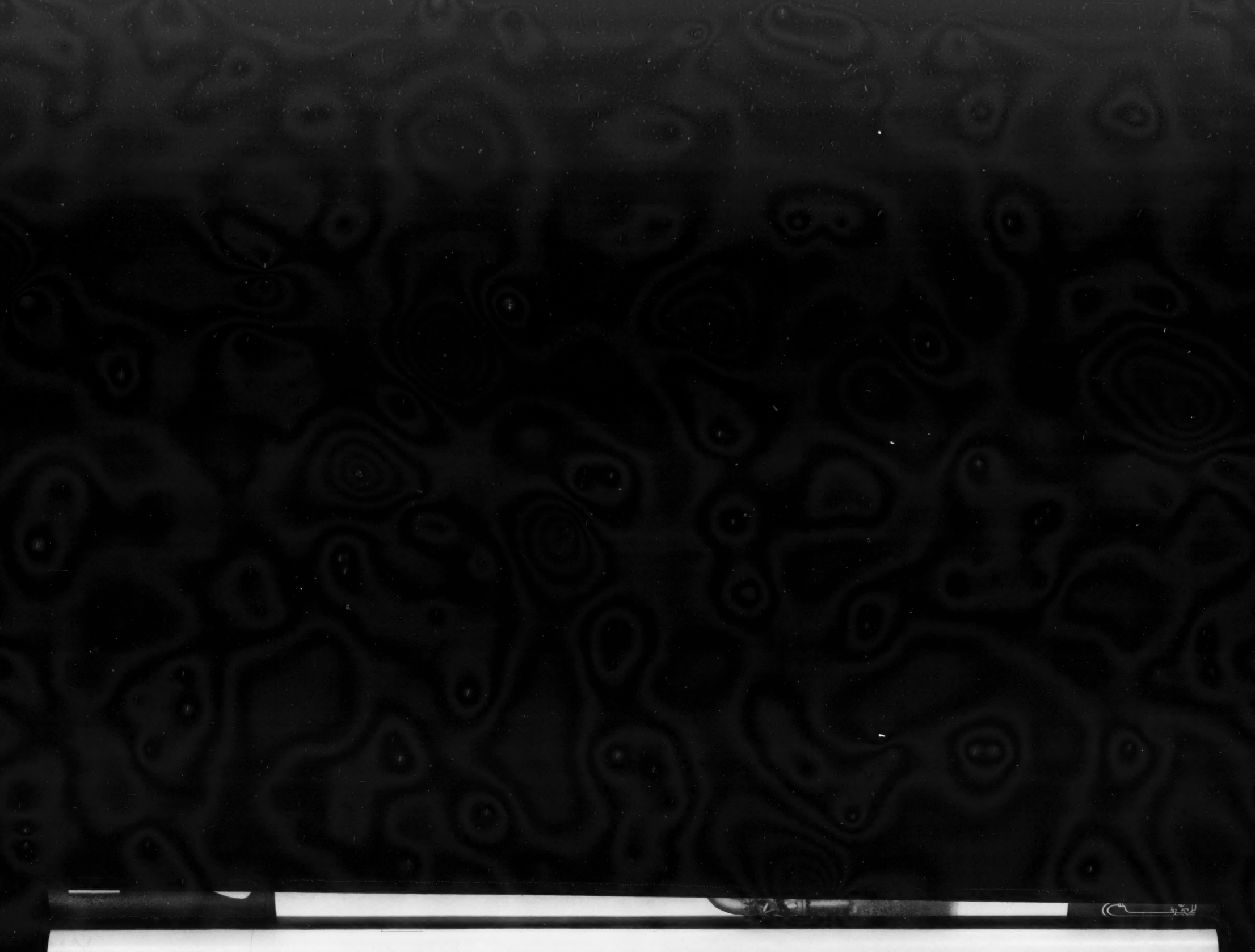
Let us give you complete details on their specifications and use. Your inquiry will receive prompt attention.

THE BARRETT COMPANY New York, N. Y.

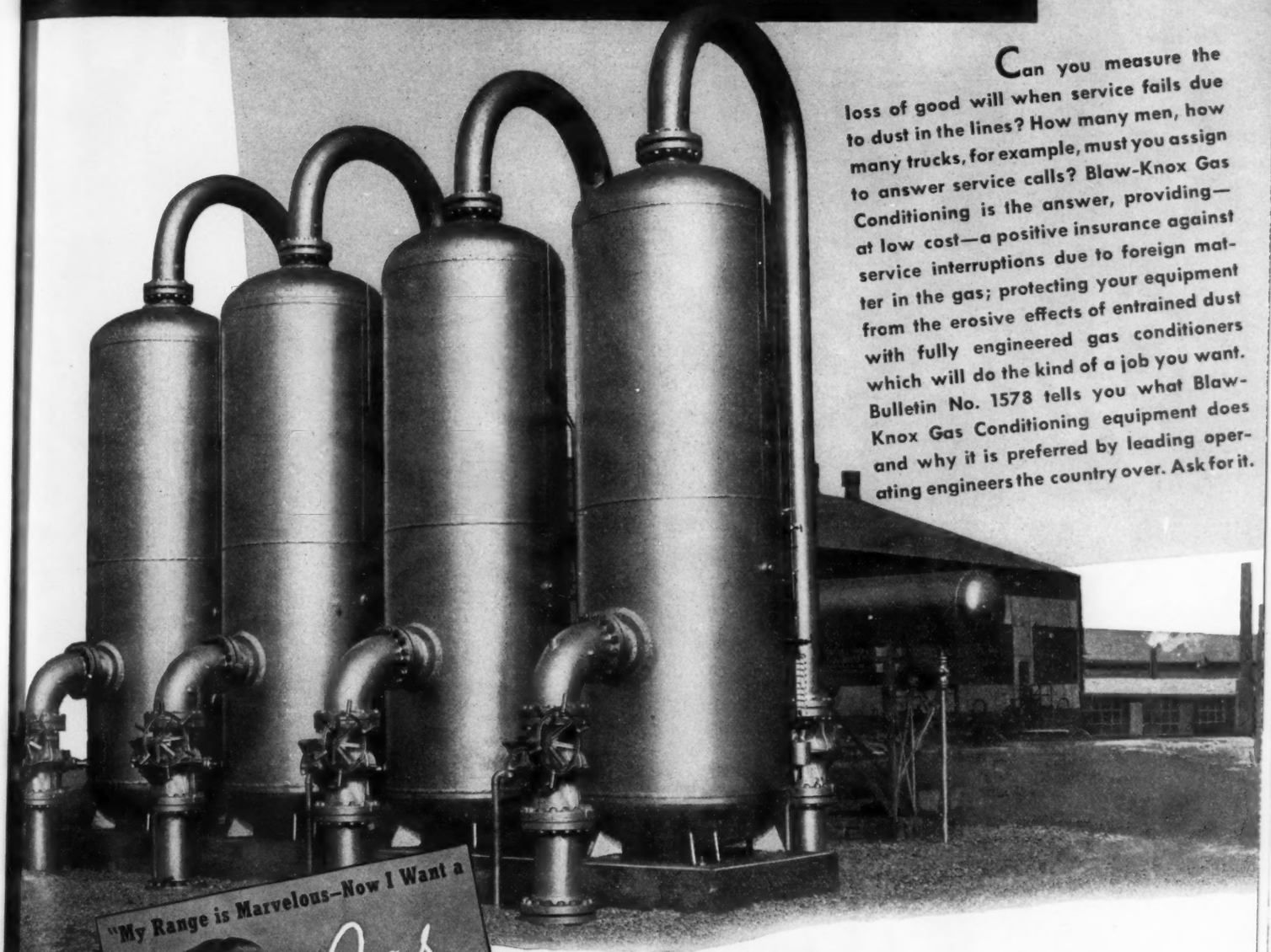
40 Rector Street

FIELD SERVICE

We maintain a Pipeline Service Department and staff of Field Service men to provide both practical and technical cooperation with engineers on jobs where Barrett Enamels are specified.

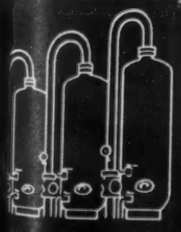


More Profit in Blaw-Knox *Conditioned* GAS!



Can you measure the loss of good will when service fails due to dust in the lines? How many men, how many trucks, for example, must you assign to answer service calls? Blaw-Knox Gas Conditioning is the answer, providing—at low cost—a positive insurance against service interruptions due to foreign matter in the gas; protecting your equipment from the erosive effects of entrained dust with fully engineered gas conditioners which will do the kind of a job you want. Bulletin No. 1578 tells you what Blaw-Knox Gas Conditioning equipment does and why it is preferred by leading operating engineers the country over. Ask for it.

Up go sales of appliances, down go service costs when GAS does its job unfailingly. As engineers know, nothing but CLEAN gas is dependable . . . especially when used with modern appliances which have smaller apertures and more delicate mechanisms.



A few of the many advantages of Blaw-Knox Gas Conditionin

1—High capacity; gives full value per dollar invested.

2—Gas is thoroughly cleaned, no half measures. Dust and other foreign matter is dynamically forced into intimate contact with washing liquid.

3—Delivers perfectly clean, dry gas (if desired, equipment will resaturate with oil or water vapor).

4—Pressure losses cut. Very little loss in contacting and separating sections.

5—Dust and dirt are completely removed from gas flow.

6—Blaw-Knox Gas Conditioners are the result of many years' research and experience in dust removal and separation of liquids from gas.

BLAW-KNOX
GAS CONDITIONERS

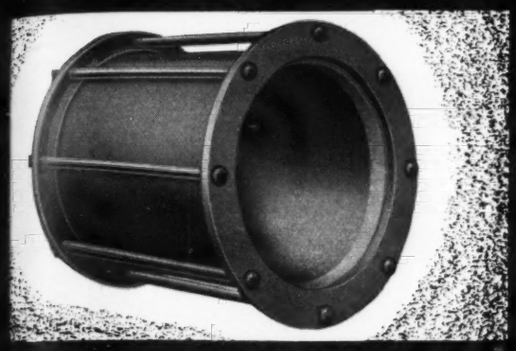
BLAW-KNOX DIVISION of Blaw-Knox Company • FARMERS BANK BLDG., PITTSBURGH, PA.

DAYTON

For every type of Coupled Line

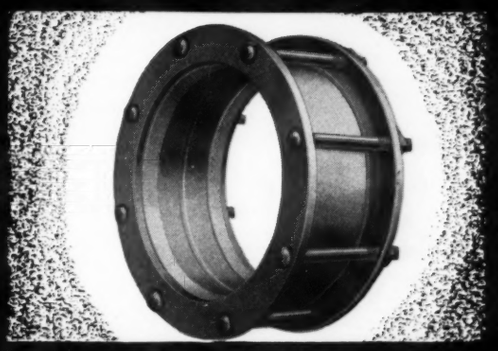
THE NATIONAL

DAYTON COUPLING DIVISION....



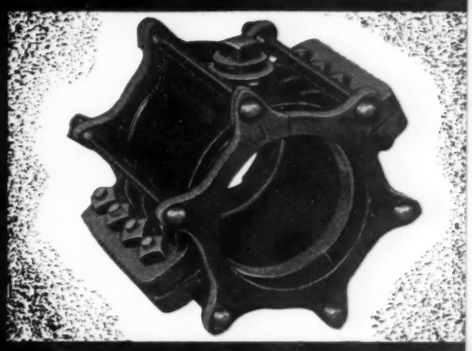
No. 5 COUPLINGS

A most economical, effective method of repairing broken steel lines where a section of the pipe must be removed . . . Long center permits installation where expansions and contractions are beyond the range of the shorter No. 1 coupling center.



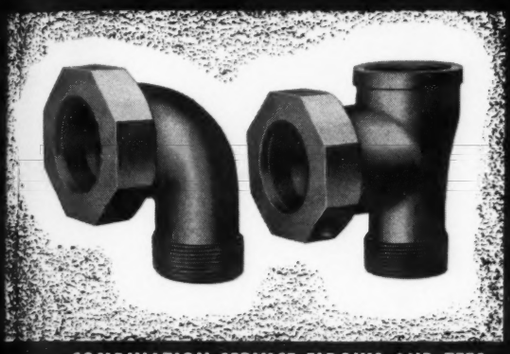
No. 1 COUPLINGS

For connecting plain end steel pipe, provides a tight, flexible joint that will withstand pressures in excess of modern requirements . . . Sizes range 6 inches to 24 inches inclusive, with gaskets for any service.



No. 8-B SLEEVES

Made entirely of malleable iron for repairing breaks in cast iron pipe and also for reinforcement where large service taps are made . . . Its simple construction and light weight reduce labor and other installation costs to a minimum.

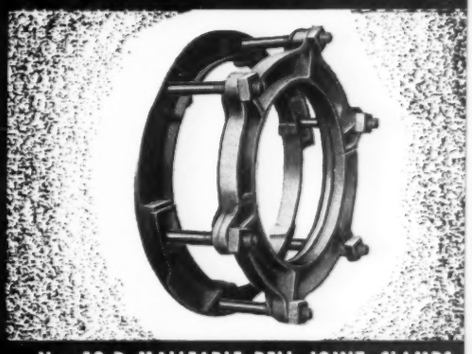


COMBINATION SERVICE ELBOWS AND TEES

Provides a flexible connection between service lines and mains . . . The boltless outlet provides for pressure relief at the tap when expansion, contraction, or shifting occurs in either the main or service line. Their use eliminates threading of services in any type of installation . . . Available in all service sizes.

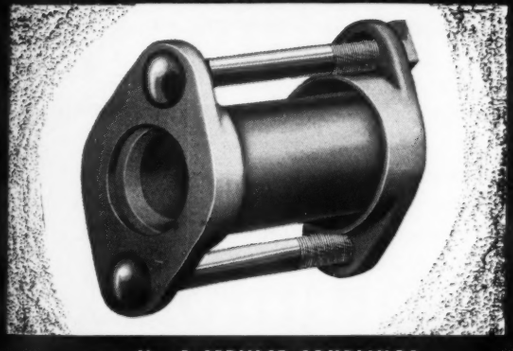
BOLTLESS COUPLINGS

The first boltless coupling to use the wedge type gasket . . . Simplicity of design and ease of installation have made this coupling popular with gas and water distributors. Constructed entirely of highest grade malleable iron, it has high corrosion resistance . . . Sizes, ½ inch to 2 inches inclusive, with centers 3, 5 or 10 inches in length.



No. 12-B MALLEABLE BELL JOINT CLAMPS

For repairing joint leaks in Bell and Spigot pipe. This clamp features fewer parts, especially in the larger sizes, which speeds up and reduces cost of installation . . . A positive seal is assured as it is fashioned to the joint and its roundness corresponds in detail to pipe circumference.

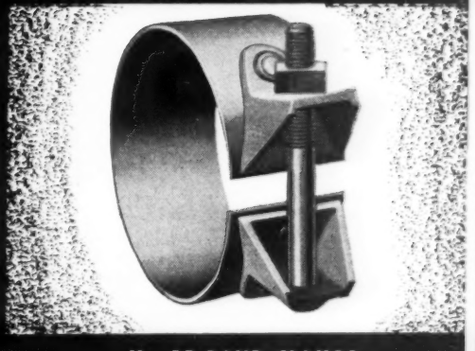


No. 1 SERVICE COUPLINGS

Constructed with malleable flanges and seamless steel centers, it is an ideal coupling for service lines . . . Regularly furnished in smaller standard sizes.

SINGLE AND DOUBLE STIRRUP SADDLES

Dayton Saddles are constructed of malleable iron with forged steel stirrups.



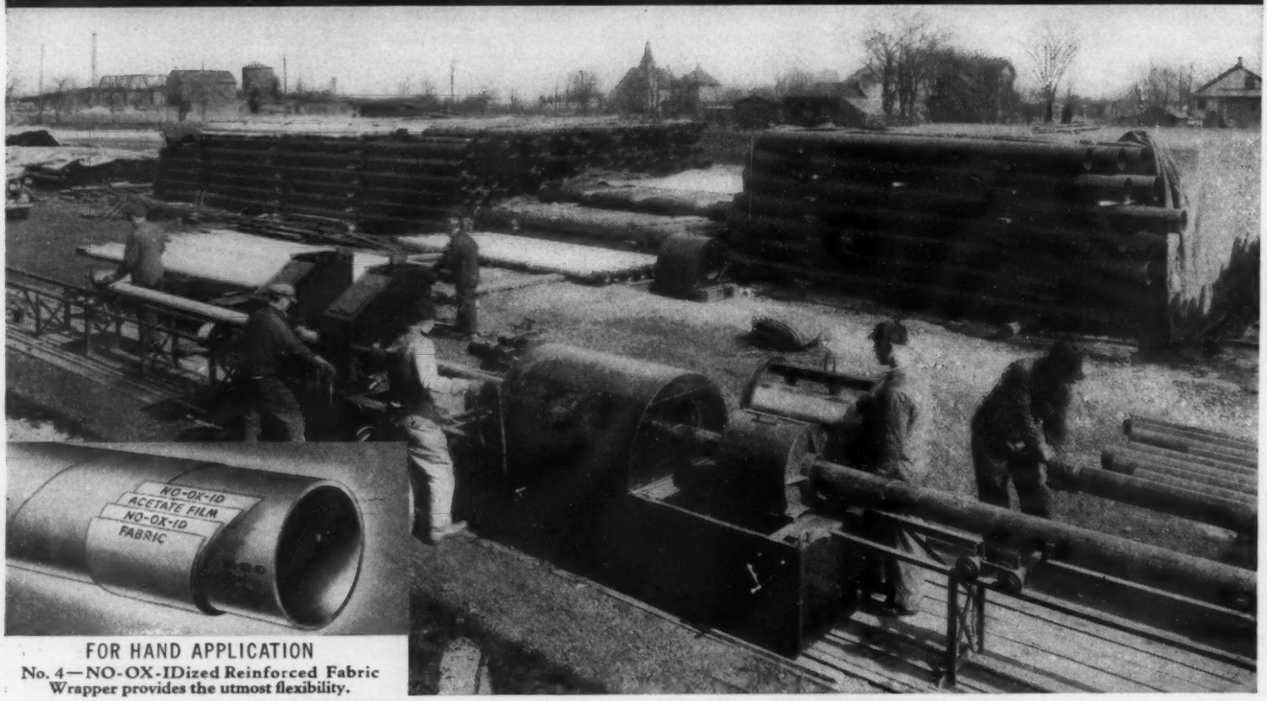
No. 15 BAND CLAMPS

A steel band clamp for repairing pinhole leaks. Made in widths to meet any specification. Can be furnished with cone gaskets if desired.

SUPPLY COMPANY

. . . GRANT BUILDING • PITTSBURGH, PA.

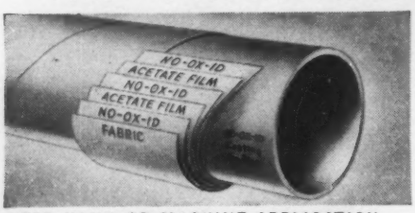
How to "WATERPROOF YOUR PIPE" for Lasting Underground Protection



FOR HAND APPLICATION

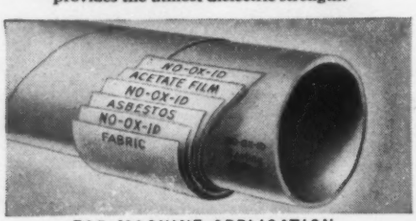
No. 4—NO-OX-IDized Reinforced Fabric Wrapper provides the utmost flexibility.

Stationary type machine cleaning pipe and applying NO-OX-ID and NO-OX-IDized Wrapper



FOR HAND OR MACHINE APPLICATION

No. 5—NO-OX-IDized Dielectric Wrapper provides the utmost dielectric strength.



FOR MACHINE APPLICATION

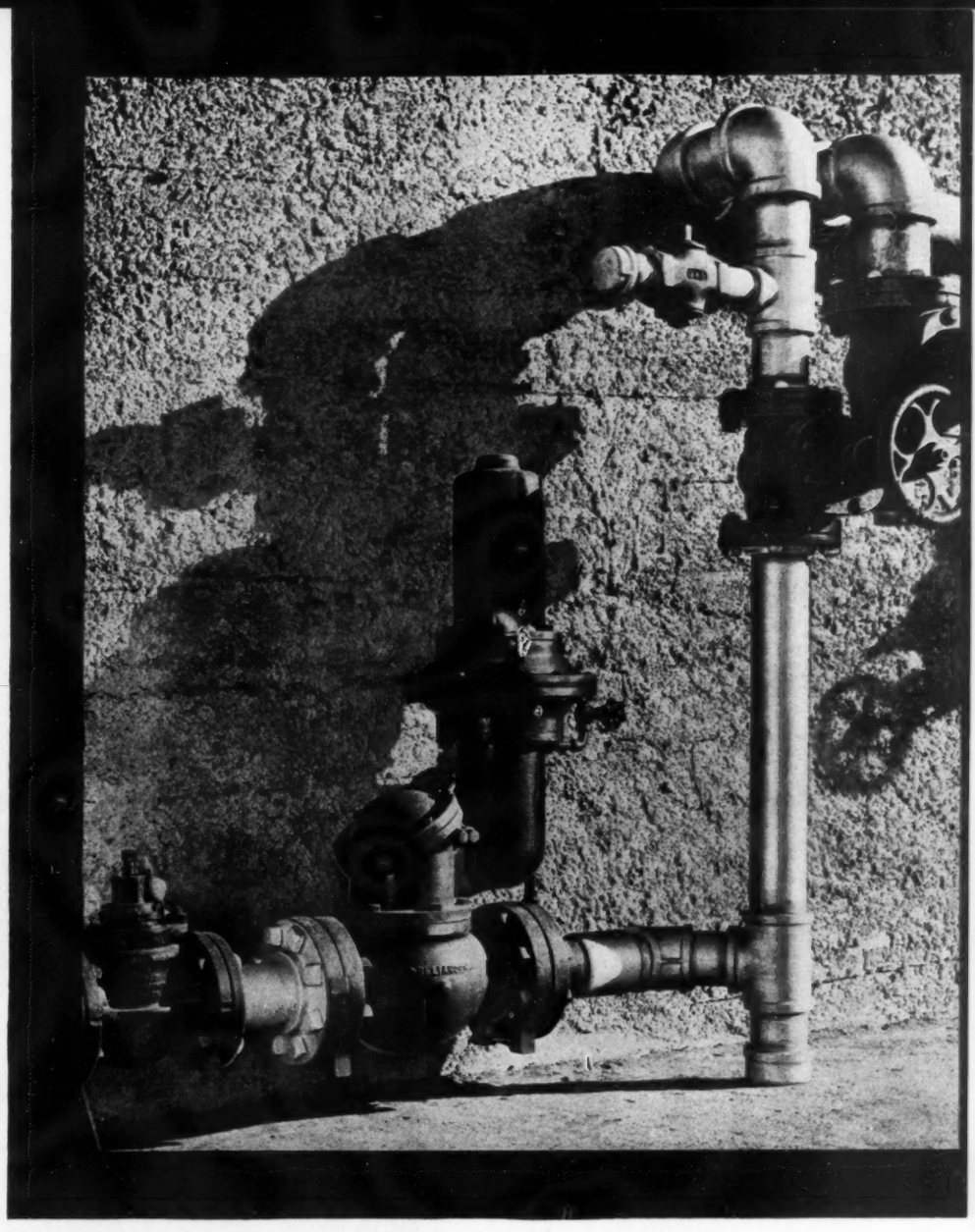
No. 7—NO-OX-IDized Reinforced Asbestos Wrapper provides high dielectric strength plus excellent shielding.

The one sure way of protecting your underground pipe lines is to prevent all corrosive agents from coming in contact with the metal. And to do this you have to "waterproof your pipe."

For permanent protection against water penetration, cover your pipe with NO-OX-ID and NO-OX-IDized Wrappers. NO-OX-ID Coatings and Wrappers possess the highest dielectric strength, even after being immersed in water for long periods. They are resistant to all bacterial growth. The physical characteristics of NO-OX-IDized Wrappers prevent soil attachments and thereby eliminate the shearing effects of soil action. In addition, NO-OX-ID contains proven rust-inhibiting chemicals that prevent pitting under the protective coating. The various combinations of NO-OX-ID and NO-OX-IDized Wrappers meet all application and soil conditions.

Dearborn Chemical Company
Dept. B, 310 S. Michigan Ave., Chicago

Write for questionnaire to get recommended NO-OX-ID Specifications



Get Reliance Regulator Economy Under All Conditions

Reliance CBV Direct Connected Regulator. Made also in offset connected types as shown in the large illustration.

Exact and always-dependable pressure control at the point of use is one of the most vital factors in economical and profitable gas distribution.

The preference of the leading Gas Companies for Reliance Regulators is based upon the uniformly reliable performance of these Regulators.

No matter what kind of gas you supply, there is a Reliance Regulator for any point in your lines—from source to service.

Comparative tests prove that Reliance Regulators rank highest in design, construction, compactness, capacity, accessibility of parts and accuracy of control under all operating conditions.

Special Bulletins are available on all types—for natural, manufactured and liquid petroleum gases.

RELIANCE REGULATOR CORPORATION
1000 MERIDIAN AVENUE, ALHAMBRA, CALIFORNIA

RELIANCE REGULATORS

24 *Engineered* FEATURES

IN THIS THERMOSTAT OF TOMORROW

LETS IT *LIVE* IN EVERY ROOM

AN ENGINEERED EXTERIOR

1. Blending, easily cleaned, lasting, dull chrome finish. Reflects surrounding colors.

2. Standard wall switch box size.

3. Unobtrusive, extends but 13/16" off the wall.

4. Cover snaps on to plastic base. No tools needed for replacement or repairs. All bases standard.

5. Correct parallel design. Walls are vertical, so is thermostat design. No modernistic right angle horizontal lines.

6. The thermally responsive mechanism is the large thermostat cover itself, unhoused, subject to immediate radiant heat and air temperature change.

7. Visible, accurate, bi-metal thermometer. Can be dropped or over-heated without damage. (Thermostat also available without thermometer or with timer.)

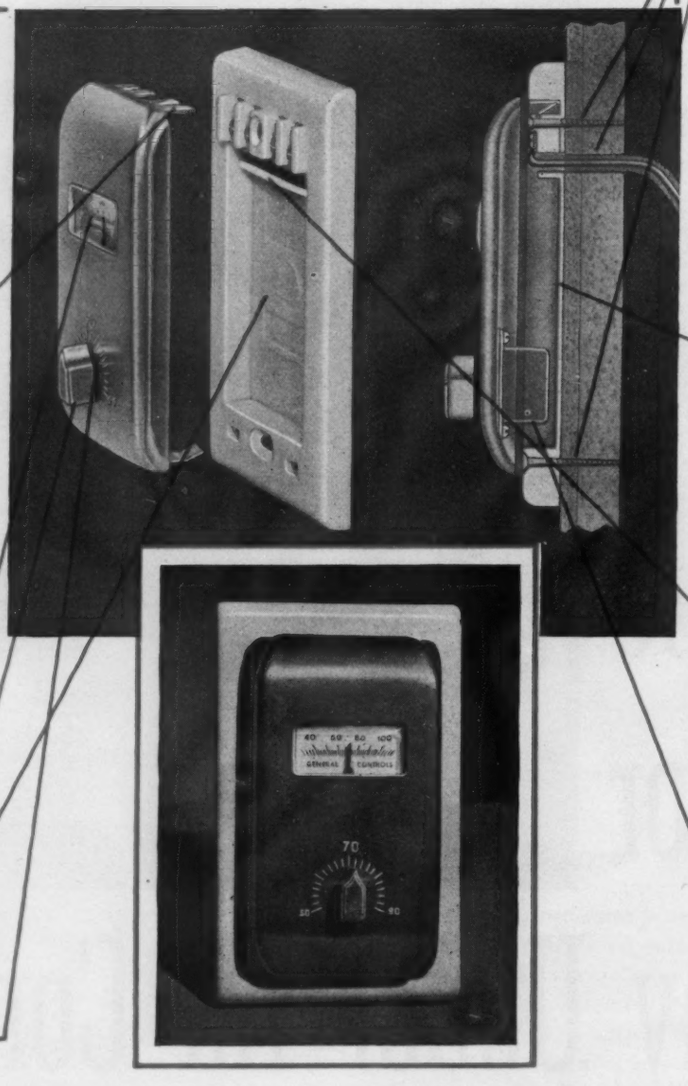
8. Base is flexible plastic, of neutral color, absolutely unbreakable. Distortion of base cannot affect thermostat operation.

9. Visible markings on face; no hard-to-read calibrations.

10. No lacquers or paint on cover to retard convected heat transfer.

11. Single knob timer setting control. No chance for errors.

12. Knobs are on surface of thermostat cover. Obviates wall smear or dirt resulting from setting device being near wall.



AN ENGINEERED INTERIOR

13. Intimate contact between cover and bi-metal; bi-metal power increased 100%.

14. Only two essential mounting screw holes and ¼" control cable opening necessary in wall.

15. Elongated screw hole at bottom of base permits leveling of device.

16. SURFACE MOUNTED with flush appearance. No recess in wall.

17. Bi-metal differential only ¼° F., without false heat input. Only one thermal lag. Cover plate readily follows room temperature. Action is as fast as any standard mercury thermometer.

18. Plastic base acts as blanket to thermally isolate thermostat from wall. Walls are not always at room temperature and wall drafts are common to most rooms; also, thermostat is free from immediate wall radiation.

19. All terminals easily accessible for wiring.

20. Ridge in plastic base keeps wiring from mechanism.

21. Small wire inlet eliminates internal wall draft factor.

22. Dust and dirt eliminated by suitable gasketed cover and felt washers.

23. Internal mechanism accessible by screwed housing, rubber gasket sealed.

24. Genuine platinum alloy contacts. (Not platinum substitute.)

ALL THIS AND *Beauty* TOO IN THE NEW GENERAL CONTROLS T-80 SERIES REGULAR THERMOMETER AND TIMER THERMOSTATS

for use with all B-60 Series ALL-GAS gas heating controls

GENERAL CONTROLS

450 East Ohio Street, Chicago, Illinois • 25 North Live Oak Street, Houston, Texas • 1505 Broadway, Cleveland, Ohio • 421 Southwest Boulevard, Kansas City, Missouri • 915 Bryant Street, San Francisco, California • 267 Fifth Avenue, New York City • 700 West Ivy Street, Glendale, California • 6432 Cass Avenue, Detroit, Michigan 687 Boylston Street, Boston, Mass. • *Distributors in all principal cities.*

GUEST Editorial

THE NEW YORK WORLD'S FAIR
Unites the Industry

By N. T. SELLMAN

Assistant Vice President, Consolidated Edison Company of New York; Chairman, Publicity Committee, Gas Exhibits, Inc.

WHAT has participation in the two years of the New York World's Fair meant to America's gas industries? We may well ask this question now that the great exposition nears its close and takes its deserving place in the annals of our country's social and industrial progress.

Little needs to be said in further praise of this World's Fair. It has been accepted with acclamation, conceived with vision and talent, molded into a masterpiece of planning, engineering and human effort, and has inspired — with few exceptions —the many millions who have traversed its grounds.

We of the gas industries have reason to feel proud as well as privileged to have played a major role in this exposition. Ours was the first industrial exhibit for which ground was broken at the Fair site — this on January 18, 1938.

Today, our building — "Gas Wonderland" on the Avenue of Patriots — crystallizes before record-breaking crowds the many utilizations of gas in the home, commerce and industry. In nearly every other building at the Fair, gas is also providing service. Dramatic night spectacles are enhanced by the skillful application of gas flames for illumination and effect. Miles of piping extending underground carry to every corner of the Fair a continuous flow of our fuel.

We have gained by this participation incalculable benefits. Good-will and prestige are not instantly measurable. Yet, there are tangible gains and results that can already be clearly stated.

We united our industry — really perhaps for the first time — in behalf of a common, far-reaching promotional endeavor unprecedented in proportion in the history of the industry.

We "debunked" the go-it-alone attitude. We demonstrated that utility would work with utility and that the objectives of the manufacturer and the utility were closely related.

We demonstrated and emphasized for ourselves and the public the vitality and continued progressiveness of our gas industries. We left no doubt in the public mind that our existence was a dominant and valuable factor in American domestic and industrial living.

Our participation in the World's Fair provided a vehicle for wide localized and national publicity and promotion. We have made other industries sit up and take notice. We have brought our "story" to the attention of a tremendous audience. And . . . as a result of our Fair activity . . . we have learned much about ourselves and the public.

This cannot be matched in the history of the gas industries.

SAFEGUARDED

. . . every Step!

● **RIGHT-SERVICE DIAPHRAGMS** . . . for new or repaired meters . . . are insured only by the perfection of every single detail. Considering the important function of the diaphragm, small initial "savings" may be decidedly "penny wise, pound foolish." Savings which fail to insure experienced manufacture . . . or uniformity . . . or flaw-free quality . . . can bring no real economy. Emphatically true of diaphragms! Every quality—every desirable characteristic determined by laboratory research, by field test and by wide diversity of installation—is found **UNSKIMPED** in the American Meter Company product. What better assurance of quality than a source of supply which today—because of adequate purchasing power—has access to prime leather selection, scientifically prepared impregnating formulas and exclusive methods of fabrication and seasoning? Like other **AMERICAN** gas meter refinements, diaphragm quality is being confirmed . . . by the actual performance records of meters in service.

● Our **DIAPHRAGM RESEARCH BULLETIN** shows the painstaking background implicit in quality merchandise. May we send you a copy—or consult with you on your diaphragm problems?

PROPER PACKING AND SHIPPING

This perfected method, developed over a period of years, has won the enthusiastic approval of our gas company customers. Note the carton built to carry fifty diaphragms. It contains four hollow square tubes. Over each tube the diaphragms are placed—four to a layer. On top and underneath each layer a piece of paraffin chip board is inserted. Thus, the diaphragm never comes in contact with the side of the case—but only with the paraffin chip board. *Safeguarded in transit . . . safeguarded in handling!*

872

ESTABLISHED 1836

AMERICAN METER COMPANY

INCORPORATED

GENERAL OFFICES: 60 EAST 42ND STREET, NEW YORK, N. Y.

THERMALLY *Thinking*

We Want Willkie

As far as we can see we are one of the few scriveners for the public prints who can lay no claim to having seen Wendell Willkie first. We didn't introduce him to Westbrook Pegler, and we never mentioned him as a favorite in the Winter Book, over a cocktail in the bar of the historic old Murray Hill Hotel.

We won't attempt at this late date to elbow our way into a spot with the first line prophets; but we will allow ourselves the trifling indulgence of saying that we like the man, we like the cut of his jib, and we believe that he is our last remaining hope of ousting the New Deal dynasty before it succeeds in transferring the United States into a one-party system with the present leader or one of his heirs and appointees permanently in the number one position.

It goes without saying that Candidate Willkie will be the odds-on favorite of the gas industry in the coming campaign; but so was Alf Landon and so was Herbert Hoover. And that proved considerably short of being enough to win an election. Let's not kid ourselves. Elections are won by the appeal of the candidate and the platform to the spontaneous good will and confidence of the rank and file of voters. These are the grass roots boys; they care little about the personal aspirations of office seekers, and they regard with suspicion any candidate who comes to them too heavily endorsed by the bosses of either politics or big business.

We believe that there have been achievements and accomplishments of the New Deal that no candidate would threaten to destroy. We believe that many of its social objectives must remain the social objectives of any party laboring for the unification and preservation of American Democracy. Those misguided Willkie enthusiasts who would kibitz his campaign by urging a return to the illusions and the futility of a bygone day may find, when it is too late, that they have contributed only to his defeat.

Every man is judged by his friends and his associates. Willkie the candidate will be no exception to this rule. Thus it is incumbent on his friends to so conduct themselves during his campaign that they do not prove an embarrassment to his prospects and a detriment to his possibilities.

We have hailed Wendell Willkie as a leader; let us continue to respect and regard him as such. Here is a man who is no apostle of reaction, no tool of any special interests, no backtracking Mahatma seeking to lead us back to the follies of the "good old days." To think or speak or write of him as such is only to render a signal disservice to his cause.

He has amply demonstrated that he can protect himself from his enemies. Let us hope that their own good judgment will not make it necessary for him to protect himself from his friends.

Just Another Meeting

GAS has commented from time to time upon the innate urge of one gas man to be with another gas man — which condition multiplied by many thousands has resulted each year in the holding of many — too many meetings—sectional, divisional, convivial, and otherwise. *However,* everyone realizes the necessity of the industry's major conventions. Two such are hard upon us. In September the time-honored Pacific Coast Gas Association holds its 47th Convention; in October the American Gas Association meets in Annual Convention. Certainly these two meetings deserve the industry's unstinted support. But, utility companies and manufacturers have just so much time, money, and energy to devote to convention activities, and if such time, money, and energy is dissipated during the year by attendance at three or four relatively minor meetings, then it follows that the year's big meeting — instead of being a period of exhilaration and enthusiasm, where friendships are renewed and ideas exchanged — will degenerate to the point where it is "just another meeting."

The Circle

Human nature being what it is, we don't often put in a plug for other mediums of dissemination of the Gospel and the Truth regarding the gas industry. Our official viewpoint is that all you need to know about the industry can be assimilated once a month by reading *GAS.* But we are moved this month to break that rule of silence, so that we may extend greetings and felicitations to *The U.G.I. Circle,* which just now completes its twentieth year of continuous publication, "By, of and for," as the masthead on its Volume 1, Number 1 stated, "employes of the United Gas Improvement Co., and other gas and electric companies."

Here is a company publication that over the years has maintained and added to the standards of professional trade journalism, without losing the intimate personal touch with U.G.I. employes that its greatest effectiveness demands.

To the editors, our sincere congratulations — and a confession: More times than just a few have we read articles in the *Circle* that we have heartily wished had crossed our desk first.

MICHIGAN GAS TRANSMISSION CORPORATION'S

55-Mile Loop Line Project

THE Michigan Gas Transmission Corp. of Detroit on May 15 started the construction of 54.77 miles (289,216 ft.) of 20-in. gas transmission line which will loop the company's existing facilities between the Illinois-Indiana state line and the company's Zionsville compressor station. The loop line project will provide sufficient gas capacity for the general increase in the requirements of the markets served by the company, according to George S. Young, vice president.

The west section of the construction will be from Montezuma compressor station eastward for 16.66 miles (88,025 ft.). At this point, this new section will connect with the east section of the loop laid in 1939. The second section will start at a point 21 miles east of the compressor station at the eastern terminus of the east loop laid in 1939 and will extend to Zionsville compressing station, a distance of 38.10 miles (201,191 ft.). (See map.) Approximately 25 miles of the project will be constructed in rough terrain. All work is being done from west to east, and T. R. Jones, Inc., Dallas, Texas, has the contract.

In addition to pipe line construction the company will add to its compressor station facilities. Contracts have been let for one main compressor unit at Montezuma and one main unit at Zionsville, Ind., while the contract for another unit at Montezuma is to be let.

A third compressor station will be built by September 15 at a point where the 22-in. Detroit line crosses the Ohio-Indiana state line. The original equipment there will be three 1300-hp. Cooper Bessemer engines. Contract for the construction of the Edgerton station has been given to the Fluor Corp., Los Angeles, Calif., to be completed by November 30.

In the spring of 1936, the corporation constructed about 231 miles of 22-in. main line from Zionsville, Ind., to Detroit, Mich. This line connected with an existing 20-in. line running westward to the Illinois-Indiana state line at which point it tied into the main transmission line of the Panhandle Eastern Pipe Line Co. from the Texas fields. Also, in the spring of 1936, the corporation constructed its Montezuma compressor station about 11 miles east of the state line. This station as originally constructed had two 1300-hp. Worthington engines.

In 1937, Michigan Gas Transmission Corp. built its Zionsville compressor station, equipping it with four 1300-hp. Worthington units and added two 1300-hp. Worthington units at the Montezuma station.

In 1939, a portion of the 20-in. line between the state line and the Zionsville station was looped by two sections. The first extended from the state line to the station, a distance of 9.04 miles (49,785 ft.). The second section was from a point approximately 15 miles east of Montezuma station and ran eastward 5.96 miles (31,507 ft.); both of these loops were constructed with 25-in. pipe.

In the loop from the Illinois-Indiana state line to Montezuma station was a crossing of the Wabash River consisting of two 16-in. lines and the distance from header to header was 4477 ft.

The pipe line under construction is of the composite type, being alternately welded and coupled. The pipe is 24-in. O.D., 5/16-in. wall, tested to 800 lbs. hydrostatic pressure and was furnished by the National Tube Co. It is estimated that approximately 3500 24-in. Dresser style 38 couplings with armored tip gaskets will be used. Cast steel gate valves are furnished by the Crane Co. and plug valves by the Merco Nordstrom Valve Co. Reinforcing split welding sleeves will be furnished by Mid West Piping & Supply Co., and it is estimated that between 800 and 1000 may be used. Pipe line coating is furnished by Wailes-Dove Hermiston Corp.

After the pipe is in the ditch, the top quadrant is being covered with a tar-saturated felt furnished by the Barrett Co. This material is Barrett No. 1 double thick rag base, coal tar-saturated pipe line felt weighing approximately 26 lbs. per 100 sq. ft. and is supplied in rolls 24 in. wide by 150 ft. in length. After the pipe has been lowered in, the felt is rolled over the top of the pipe and couplings. It is spot daubed with enamel at irregular intervals to prevent displacement by the backfill.

Map showing the service territory of the Michigan Gas Transmission Corp. The area in black designates the company's new 55-mile pipe line construction project.

RADIO COMMUNICATION

Its Use in Gas Dispatching; Its Value During Emergencies

FIG. 1

Power unit used in field work which supplies 110 volt AC current and has a capacity of 1000 watts. Portable field antenna in the distance.

▲

THE use of radio has long been recognized as a means of augmenting the usual telephone and telegraph land lines. Due to a lack of knowledge that permission to operate emergency radio equipment can be obtained, or a lack of appreciation on the merits of such equipment for emergency use, or possibly a reluctance to obtain such equipment because of costs, supervising and personnel problems, the adoption of radio by gas pipe line companies has been very limited.

There now appears to be a favorable attitude for such permits by the Federal Communications Commission as indicated by Information Release 38660, dated Washington, D. C., January 22, 1940, in situations wherein conditions of emergency are likely to arise.

It has been rather difficult to define what constitutes an emergency, but it is believed that the Commission will be reasonable in their attitude, providing, of course, that the users do not abuse their privileges. The Federal Communications Commission defines an emergency as follows:

> "SCOPE OF SERVICE — Special emergency stations may be used only during an emergency jeopardizing life, property, public safety, or for essential public service, or when such an emergency is imminent, for communications relating thereto and for other essential communications. They may be used (a) for transmission from one point to another between which normal communication facilities are not usable, or are temporarily inadequate, or (b) for transmission to or from mobile units."

No radio frequency for emergency service will be assigned exclusively to any one applicant. All stations in this service are required to coordinate their operation to avoid interstation interference and to make the most effective use of the frequencies assigned.

Radio facilities should not be used in lieu of wire communication, nor merely for their economy, but only in applications where radio furnishes the only means of direct contact.

There are a number of frequencies available at present in the medium and ultra-high bands, allocated to special emergency stations. The use of these allocations may show that they are insufficient, in which case we anticipate, additional frequencies might be assigned, providing they are not already in use by some equally important service.

However, if the frequencies as assigned are not used, then it can be expected that they will be assigned to other services where they are needed, and will be used. It is felt that gas pipe line companies should make use of the allocated frequencies, anticipating that once used they would find it so helpful that they would not wish to be deprived of the service.

On the radio system of the Natural Gas Pipeline Company of America a medium-high frequency is utilized that provides for simplex operation.

• WHILE FLOODS, WINDSTORMS, fires, and other disasters are referred to as "emergencies," they nevertheless appear to occur throughout the country with sufficient frequency to warrant reasonable preparatory measures, particularly when one considers the desirability of safeguarding the industry's well-earned reputation for uninterrupted service. Inasmuch as communication is usually the first facility to suffer interruption during an emergency, and since such interruption can so severely cripple the operation of a gas system, it appears desirable to give consideration to the wider use of radio as a standby service. The experiences of a large gas pipe line company in utilizing such radio service are outlined by WARREN T. BULLA, Natural Gas Pipeline Company of America, Chicago, in a paper, "Radio Communication for Gas Dispatching and During Emergencies," which was presented before the A. G. A. Natural Gas Section Convention at Houston, Texas, May 6-10, 1940. — (Abstract by GAS.)

In order that a single radio frequency can be used by several stations, it is necessary to use the simplex system. In this way the receiver of the station is inoperative during the transmission from a station. It is thus necessary to operate a switch at the station to transmit and again to operate the switch for reception at the same station. Break-in operation is therefore not provided. Much of our use of radio is in transmitting instructions to employes traveling in cars equipped with receiving sets. We find this arrangement satisfactory.

Many of the utilities using mobile transmitters and who have two frequencies available for their use have two-way transmission known as a duplex system.

The station transmitters and receivers operate on 110 volt, 60 cycle A.C. current, using the standard supply provided at compressor stations. When used at emergency locations, current is supplied by a portable gasoline-powered dynamo, with an output of 1000 watts (see Fig. 1).

The 50-watt transmitters require 105 watts in a stand-by position and 425 fully modulated. Receivers require approximately 60 watts in a receiving position.

Two types of antennas are in use on the system. Both are of the Hertz half-wave, off-center fed type. One is a fixed antenna erected at compressor stations on supports 60 to 80 ft. high. The

FIG. 2. Packages containing complete radio station—power plant, transmitter, receiver, tent, antenna, and all necessary wiring. Carrying cases for transmitter and receiver can be converted to field desk and stool.

other is portable for use at emergency location, erected on 30-ft. collapsible pipe supports. Signals can be directed to a certain extent by the type of antenna used.

There are numerous types of microphones available. However, a telephone hand set has been found to be quite satisfactory. A four conductor cord to the hand set is used, which provides two-way simplex method of transmission from a point remote from the radio station.

Special manually controlled equipment has been made up to tie the radio into a telephone circuit. Thus first-hand reports can be transmitted from an emergency location to a headquarters office.

Auxiliary equipment provided includes wooden carrying cases which are convertible to workable field desks and stools, a small umbrella tent for housing an emergency work, and the necessary lightning protection and grounding equipment. Fig. 2 shows complete equipment ready for transportation, while Fig. 3 shows the same apparatus set up in a tent in the field and ready for service.

Cars and trucks of pipe line foremen and maintenance crews are equipped with radio receiving sets of the "police cruiser" type for operation on a set frequency to receive instructions when an emergency occurs. Tests are made by each radio station at regular intervals each day to determine if all transmitting and receiving apparatus is functioning properly.

Portable battery-powered receivers have been provided in some instances for the use of maintenance crews working in remote locations where the automobile sets could not be made available. Batteries in this type of equipment have a life of about 300 hours.

The equipment in service has been assembled from a number of sources of manufacture, but by making a few changes it has been found to be a very workable arrangement.

The principal instruments required for servicing radio equipment are: Frequency measuring set, signal analyzer, oscillator, oscillograph, tube tester, and condenser tester.

The company's telephone department has the responsibility of the operation and maintenance of the radio equipment although the radiotelephone operators are the regular employes of the pipe line and compressor station departments. Prospective radiotelephone operators are provided with helpful information by the telephone department to prepare them to qualify as operators. The operation is handled by operators licensed as restricted radiotelephone operators, although a limited number of second class operators are made available when their services are required in making any changes in adjustment of the equipment which will effect the frequency of the transmitter.

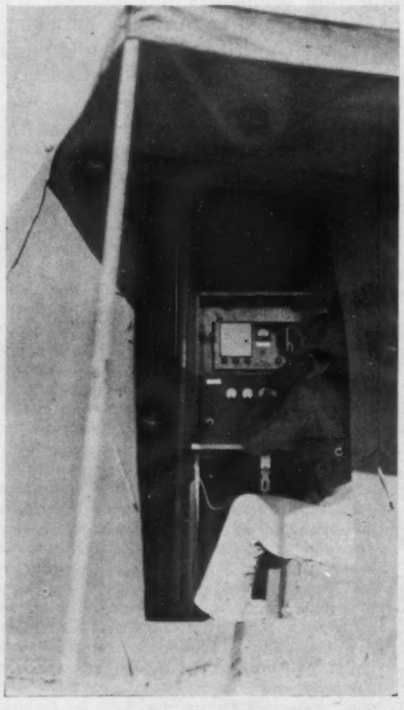


FIG. 3. Showing radio set in portable housing. (Small umbrella tent.)

Fourteen Indiana Cities To Change to Natural Gas

A NUMBER of Indiana cities will be changed over from mixed to straight natural gas, following recent approval of the change-over plan by the Indiana Public Service Commission. The towns of Jeffersonville, Claysburg, Clarksville and Silver Hills were given service July 15, and Greencastle, Cloverdale, Martinsville, Franklin, Edinburg, Columbus, Seymour, Mitchell, Bedford, and Bloomington will be served by October.

Under the direction of Herman G. Horstman, superintendent of gas and water distribution for the Public Service Co. of Indiana, Indianapolis, a special crew of 40 service men have adjusted appliances to burn the new gas.

The gas will be provided by the Louisville Gas and Electric Co., Louisville, Ky., and the Universal Gas Co., Owensboro, Ky., according to H. W. Olcott of Bozell & Jacobs, Inc., Indiana advertising firm. The Louisville Gas and Electric Co. will continue to provide the 570 b.t.u. manufactured fuel for the New Albany customers pending further negotiations with city officials.

■ ■

United Gas Co. Completes 35-Mile New Orleans Line

The United Gas Pipe Line Co., Houston, Texas, recently completed about 35 miles of 12-in. pipe from Lirette field to a point north of the Mississippi River near St. Rose, La., to connect with its Baton Rouge-New Orleans line. The line will augment the supply of natural gas to city gate and industrial customers in the New Orleans area. Testing is completed and service begun.

Besides a multiple submarine pipe line across the Mississippi River, laying of the 35-mile line involved an unusually difficult construction problem due to the topography of that part of South Louisiana, since much of the territory is dense marshland with many places completely covered with water. Numerous bayous and canals were crossed.

■ ■

Vegreville, Alberta, Will Receive Natural Gas

Vegreville, Alberta, Canada, will receive natural gas by August 15 from the Northwestern Utilities, Limited, Edmonton. The 20½-mile, 4½-in. O.D. high pressure line will be extended from the company's main transmission line at a point near Holden, and during the first year it is expected that 270 consumers will be obtained and that by the end of the fourth year there will be 420.

A reducing, measuring and odorizing station will be built near the town. The undertaking is being built, owned, and operated by a subsidiary of Northwestern Utilities, Ltd., to be known as Vegreville Gas Co., Ltd., at a cost of $190,000.

■ ■

White Oil Company May Serve Tuttle, Oklahoma

A committee appointed by citizens of Tuttle, Okla., which is negotiating with S. O. White of Sayre, Okla., for natural gas service, went to Hydro, Okla., to investigate the service being given at the latter place by Mr. White's company, The White Oil Co.

If the committee's report is favorable and a franchise is voted to The White Oil Co., the concern will invest about $40,000 in a gas distribution system in Tuttle and will lay plans for extending its lines to Minco, Okla.

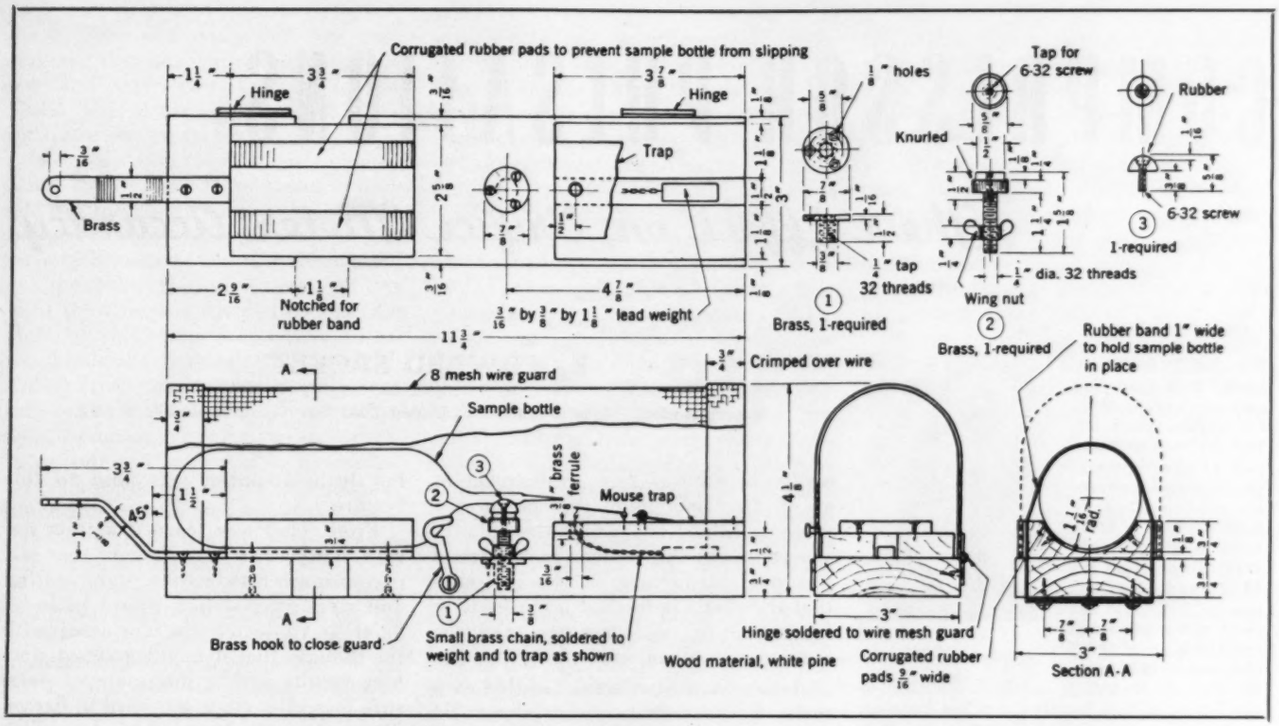


FIG. 1. Detail drawing of a device for collecting air samples in inaccessible places.

Sampling Air or Gas in Inaccessible Places

By W. J. FENE*

IT is often desired to obtain samples of air in places where collection by ordinary methods is not feasible, as in shafts where means of descent or ascent are not provided, in sewer manholes, in gas or water wells, in empty oil tanks, and in sealed areas in mines. Heretofore, when such sampling was required, it was necessary to utilize the aspirating method, which was not always satisfactory; and to obtain samples of air in deep shafts, it was necessary to use long sections of rubber tubing, which was not always available.

A new method or "device" employs a common snap-type mousetrap to break the neck of a vacuum tube at the place where it is desired to collect the sample. A mousetrap is mounted on one end of a block of wood 11¾ x 3 x ¾ in. in such manner that a lead weight attached to the trigger will spring the trap when the device is given a sharp jerk. A vacuum tube is placed on the other end of the block and held in place by a strong rubber band. A strip of corrugated rubber is placed on each side of the grooved block to prevent the tube from slipping when the sample is taken. An adjustable shoulder, provided with a rubber cap, is placed so that the neck of the vacuum tube will rest on it. The shoulder is made adjustable to accommodate various sizes of tubes and to keep the neck of the tube from breaking too far back from the point. A metal handle is fastened to one end of the block, with a hole in the end through which the brass wire used for lowering the device is tied. The device is enclosed by a strong wire-gauze covering, hinged on one side and so arranged that it can be locked shut on the other side. This covering prevents breaking of the tube while it is being lowered or raised in a shaft or other place. Brass wire of not less than 22 gage should be used for lowering the device. The device is shown in Fig. 1.

In collecting air samples in shafts, sewers, gas wells, or empty oil tanks, a vacuum tube is adjusted so that the spring of the trap will hit the neck of the tube about halfway between the file mark and the tip of the tube. The trap is then set, making sure that the lead weight is extended downward as far as possible. The device is then lowered in a vertical position to the point where the sample is to be collected, and the lowering wire is given a sharp jerk, which will cause the trap to spring and break the neck of the tube. The device then is pulled quickly to the surface and a seal placed on the opening in the neck of the tube. Under ordinary atmospheric pressure, none of the sample will be displaced in the tube while it is being raised to the surface. Samples have been collected with this device in shafts at depths of 450 ft. and through a 6-in. vent pipe in a concrete seal over an air shaft. Samples may be collected any place in a shaft or well.

In collecting samples from behind seals in mines it is necessary, of course, to provide the seal with a pipe large enough to permit passage of the sampling device. With the cover removed, the device can be passed through a 3-in. pipe. To collect a sample of air from behind a seal, the device should be fastened securely to a pole or rod and pushed through the pipe, making sure that the lead weight connected to the trigger of the trap is extended as far as it will go. A sharp jerk forward will cause the trap to spring and break the neck of the tube.

*Reprinted from Bureau of Mines Information Circular 7122. Mr. Fene is mining engineer of the Safety Division of the Bureau of Mines, Pittsburgh, Pa.

COMPRESSOR PULSATIONS

Their Effect on Orifice Meter Accuracy

By EDWARD SACKETT

Superintendent, Meter Department, United Fuel Gas Co., Charleston, W. Va.

E. SACKETT

MR. SACKETT prepared this study on compressor pulsation for presentation before the Annual Meeting of the Appalachian Gas Measurement Short Course School which is to be held at Morgantown, West Virginia, on the 19, 20 and 21 of this month. This topic has been given previous treatment in GAS (September, 1938, page 55) by T. K. M. SMITH and R. E. MORTER of the Industrial Fuel Supply Co. of Los Angeles, in an article entitled "The Detection and Mitigation of Pulsation in Orifice Meters."—Editor.

IT has been known for many years that errors might be introduced in the measurement of gas by orifice meter when the measuring station was on a line which was subjected to pump station pulsation. The magnitude of these errors was something that was only known in a vague way, and from time to time suggestions were made as to a means of eliminating them.

The writer had occasion about 25 years ago to install a measuring station in which gas was measured at a point about 1000 ft. from the discharge side of a compressor station, and from the beginning of operations it was suspected that the station was indicating a greater delivery than the amount of gas actually being pumped. It was decided to install a flange on the inlet side of the measuring station and insert an orifice plate having a lesser diameter than the one used in the measuring station. It was hoped by this means to have the impulses from the compressors taken up by this orifice and not be communicated to the measuring device. By doing this we were enabled to obtain reduced deliveries at the meter, but at the same time, the differential across the restriction orifice was so great that the operator of the pump station complained about his increased pumping cost and lesser deliveries. Another experiment was then made by substituting for the restricting orifice a heavy plate, perforated with a series of holes, the total area of these holes being equal to the area of the orifice used for measuring the gas. The orifice in use was 2 in. in diameter in an 8 in. line, and the perforated plate contained 16 ½-in. holes equally spaced about the center. This method was not satisfactory as it was found that the small holes had a tendency to freeze up in cold weather, and the method was abandoned.

A second station was installed at a main line junction point about six miles away, to which the gas from this station was transported through a 6 in. pipe line. At once it became apparent that the meter at the pump station was over registering, the differences between it and the station at the main line being from 6 to 13%. A shut-in test of pipe line was conducted and it was found that the discrepancies were not caused by pipe line leakage. The two stations were operated as long as the pumps were in use, and with the same results. It was noticed that the differences were not always the same, but little attention was paid to this feature.

From what was learned at this station, however, it was thought that reservoir space between the pump station and measuring station would be beneficial, and a device was fabricated, with the thought that it might give satisfactory results with a minimum of pressure loss. An orifice was used in flange, between the two sets of headers. This orifice was slightly smaller than the one in use for measurement. Good results were obtained by this method, particularly at small pump stations consisting of one or two small compressors. Instances have been known where after the installation of this device the measured volume had decreased 25% to 30% without material change of suction or discharge pressures.

In view of the interesting facts disclosed by this preliminary work it was decided to install a test set-up at a pump station for experimental pur-

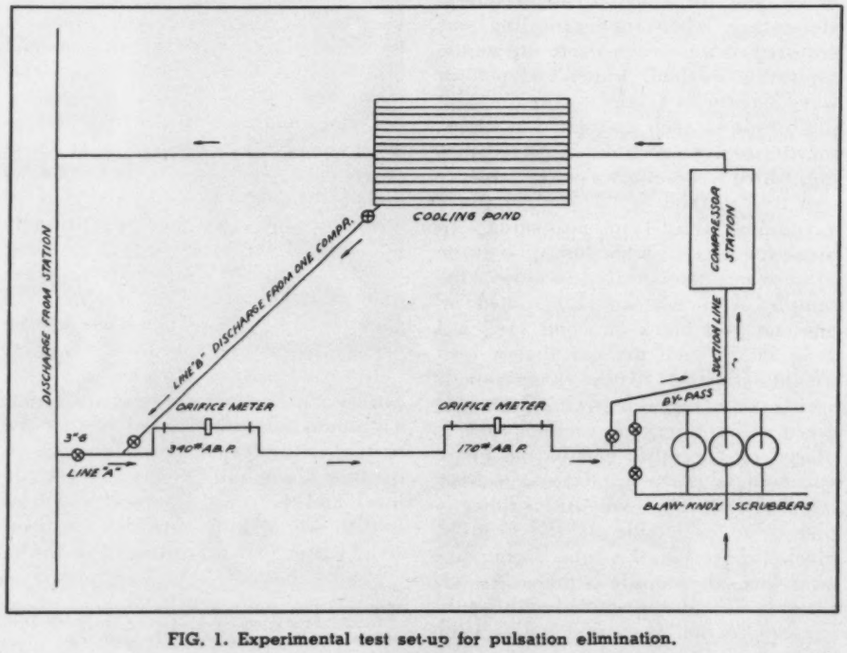


FIG. 1. Experimental test set-up for pulsation elimination.

poses. This was done and not only were the theories confirmed but many new and interesting facts were disclosed. This test set-up consisted of the apparatus shown in Fig. 2.

The main line on discharge side of pump station was tapped and a 3-in. gate was installed (see Fig. 1, Line A), the gas being measured through experimental meters, and then discharged into the pump station suction. At this point the line was divided so that the effect of scrubbers on suction pulsation could be determined. Line "B" leading from one compressor only, was installed so that the effects of pulsation could be analyzed using one compressor as well as a battery of compressors.

It is known that effects of pulsation are entirely eliminated when the absolute metering pressure is reduced to a value one-half the absolute pressure of the compressor discharge. Most tests were made at about 325 lbs. gage on the first meter (340 lbs. absolute) and the reference meter was operated at 70 lbs. absolute. By this means, it was known that the reference meter was correct. Comparative tests were then run at intervals over a three-year period, and from the results obtained, it was concluded that errors from zero to infinity were liable to be encountered.

An analysis of tests made at various pressures, various differential heads and various orifice sizes or orifice to pipe diameter ratios shows conclusively that the error was greatest at the highest static pressures, lowest differential heads and lowest orifice to pipe diameter ratios. While this was self-evident when analyzing the test data, it was not considered at first as a means of eliminating errors until suggested by J. E. Overbeck, of the Columbia Engineering Corp., of Columbus, Ohio, who contributed valuable assistance throughout these tests. It seemed probable that at high differential heads and high orifice to pipe diameter ratios, the error resulting from compressor pulsation could be reduced to a negligible quantity or even eliminated completely. A considerable number of tests were conducted under these conditions and the more tests that were run the more encouraging the results became. While the magnitude of the error varied depending upon the number of compressors in use and metering pressures, the general trend of effects for changes in differential head and changes in orifice to pipe diameter ratios is shown by Figs. 2 and 3.

In attempting to apply the results of these experiments to a commercial measurement where pulsation error was believed to exist, some experimental orifice meter runs of small size were fabricated, using an orifice to pipe diameter ratio of about .73 and differential gages having a range of 0 to 200 in. of water. Experiments which were conducted using this equipment proved quite conclusively that this was a practical means of eliminating error to a point well within the limits of commercial accuracy. Fig. 4 shows the general set-up of the equipment where these tests were conducted.

It was found that errors from 0 to 30% existed on the 6-in. standard meter when compared with the 6-in. reference meter, while practically no errors were found when using the 3-in. special run when compared with the 6-in. reference meter. This correction to an erroneous measuring condition was effected with no change on the 6-in. reference meter and with no change in the method of pumping, full pulsation at all times being on both the 6-in. standard meter and 3-in. special meter. While this is a radical departure from the former theories of eliminating orifice meter errors resulting from compressor station pulsation, yet with certain limitations, it seems to be a most practical solution to the problem.

To apply this method to small pumping projects, where an orifice plate of

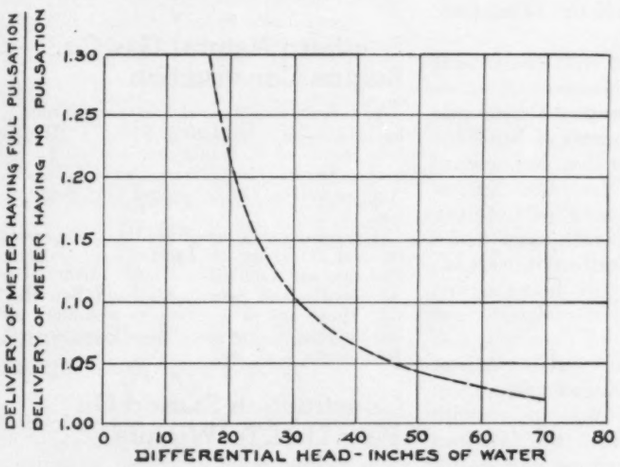


FIG. 2. General trend of effects for changes in differential head.

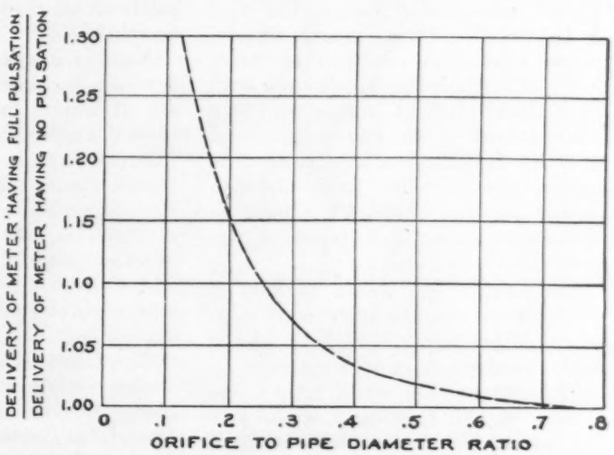


FIG. 3. General trend of effect for changes in orifice to pipe diameter ratios.

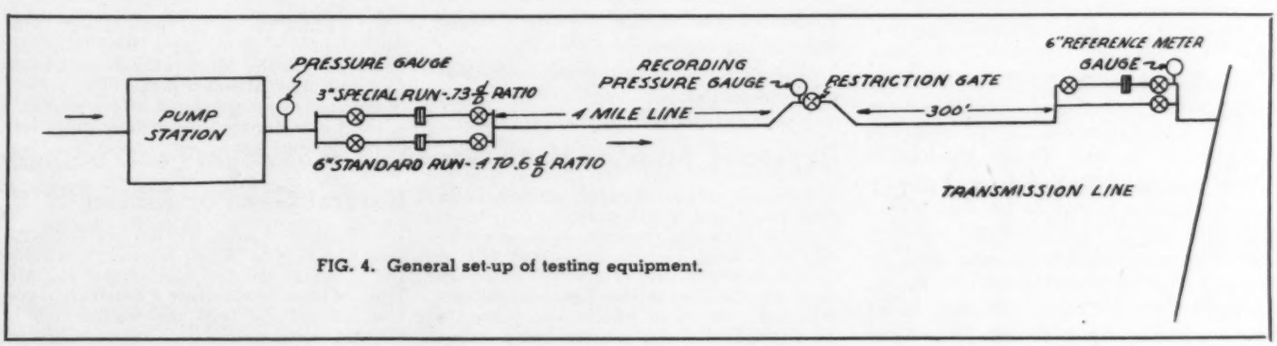


FIG. 4. General set-up of testing equipment.

1 in. or less is required, would necessitate the use of an exceptionally small runway to get the necessary high orifice to pipe diameter ratio. This would require almost laboratory precision in selecting the pipe runs as to pipe roundness, published pipe diameters, etc., as shown in the A.G.A. Report No. 2, as well as the absence of distortion due to welding orifice flanges to the pipe runs in such a manner as to conform strictly to required specifications. It may be found on these small measurement projects where gas is being pumped that some mechanical eliminator similar to that previously described may still be required in connection with some reasonable pressure loss created by the use of a special orifice plate.

The question will no doubt arise many times, where special mechanical eliminators are used, as to how the presence of pulsation can be determined, and how it can be known when the condition is remedied. An apparatus was suggested several years ago by H. S. Bean (physicist, U. S. Bureau of Standards) which would indicate the presence of pulsation. This apparatus consisted of a "U" gage, having a drop of water, connected between the gas-carrying line and a small tank filled with gas at a pressure equal to that in the gas-carrying line. The agitation of the water would be an indication of the violence of pulsation. Using this same theory as a guide, Prof. S. R. Beltler of the Ohio State University devised a pulsation indicator, which for the want of a better name was called a "Wigglegraph." It has been rather definitely established that when less than .2 in. fluctuation is shown on the "U" gage no appreciable error due to pulsation exists. In the experimental work previously referred to, fluctuations of the water in the "U" gage as great as 30 in. have been found.

Independent Natural Co. Seeks to Build 877-Mile Texas-Wisconsin Gas Line

THE Independent Natural Gas Co., Bartlesville, Okla., now a wholly-owned subsidiary of Phillips Petroleum Co., has filed an application with the Federal Power Commission for a certificate of public convenience and necessity for the construction of a natural gas pipe line from Sherman County in the Texas Panhandle to Milwaukee, Wis., a distance of approximately 877 miles.

The natural gas would be sold at wholesale to distributors serving markets at Milwaukee and vicinity thereof in the southern part of Wisconsin.

Estimated initial construction cost is $28,698,000. Financing of the project contemplates a capitalization of $12,000,000 and a long term security issue of $18,000,000. The applicant, according to the application, proposes to create another corporation to which it is asked that the certificate applied for be issued.

The application states that Phillips Petroleum Co. holds under oil and gas leases 224,266 acres of proven gas properties in the Texas Panhandle Field under which the natural gas reserves are estimated to be 2,800,000,000,000 cu. ft., and 150,768 acres in the Hugoton Field with estimated reserve of 990,000,000,000 cu. ft. In addition, the Phillips company holds contracts for the purchase of natural gas from other leases in the Texas Panhandle Field.

Natural gas is not now being used for any purpose in southern Wisconsin. However, the proposed line will cross the pipe line systems of Northern Natural Gas Co., Omaha, Neb.; Panhandle Eastern Pipe Line Co., Kansas City, Mo.; Natural Gas Pipe Line Co. of America, Chicago, Ill., and Cities Service Gas Co., Bartlesville, Okla., and will cross areas now being served with natural gas by some of these gas companies.

The line will extend across parts of Texas, Oklahoma, Kansas, Missouri, Iowa, Illinois, and Wisconsin, with laterals connecting with the facilities of distribution companies and industrial consumers.

Total population served by manufactured gas companies in this area is 1,356,218, and 274,305 domestic consumers are served.

A schedule of proposed rates was also submitted.

■ ■

Raymond, Miss., to Have Gas

Raymond, Miss., recently granted a 25-year natural gas franchise to the Mississippi Power & Light Co., Jackson, Miss. Construction of a local distribution system will be started soon and natural gas will be turned into the main from the Louisiana-Jackson pipe line. Raymond will be one of the 25 Mississippi cities that are now being served.

Proposed 150-Mile Line Will Bring Gas To Mexico City

A PROPOSED 150-mile pipe line from the Poza Rica Oilfield to Mexico City will have a daily output available of 55,000,000 cu. ft. and the project includes the construction of a distribution network for the whole industrial zone of Mexico City, as well as the central and important residential districts. It is estimated that service will be immediately given to some 40,000 residential buildings.

According to Vicente Cortes Herrera, general manager of the Petroleos Mexicanos, Mexico City, the pipe will have a diameter of 20 in. and the thickness will be ¼ in. It will receive the gas at a maximum pressure of 340 lbs.

The project was to have been undertaken the last part of 1939, but was postponed on account of the situation created by the war in Europe.

■ ■

The Peoples Natural Gas Co. Will Serve Iowa Towns

The Peoples Natural Gas Co., of Omaha, Neb., has been authorized by the state commerce commission to serve the following Iowa towns: Ames, Boone, Sioux City, Spencer, Estherville; feeder lines will be constructed, it is reported. Other Iowa towns on the proposed schedule are Atlantic, Webster City, Spencer; and Rochester, Minn. These communities are in the service territory of Northern Natural Gas Co.'s 241-mile line from Sioux City, Iowa, to Minneapolis, Minn.

The Peoples Natural Gas Co. has set up a temporary office in Estherville, Iowa, and negotiations are underway to remodel another building, according to Ray Harrison, vice president. J. P. McDermott, head of the local office, will move to Estherville from Jackson.

■ ■

Southern Natural Gas Co. Begins Construction

The Southern Natural Gas Co., Birmingham, Ala., is considering laying a 20-mile loop on the 12-in. branch line serving Tuscaloosa, Selma, Montgomery, and Tuskegee, Ala., as well as Columbus and Fort Benning, Ga.

The company is also installing compressor units at Perryville and Tarrant, La.; Onward, Pickens, and Louisville, Miss.; Tarrant, De-Armanville, and Selma, Ala., and Ben Hill, Ga. These are in addition to a compressor station that has recently been completed at Barnesville, Ga.

■ ■

Construction Started On Pipe Line To Wichita

The Cities Service Gas Co., Bartlesville, Okla., has started work on a 12-in., 65-mile gas pipe line from the Cunningham field in Kingman and Pratt Counties, Kan., to Wichita, Kan.

At Wichita the carrier will connect with the company's 20-in. main line from the Texas Panhandle, which extends to Kansas City and other Missouri points. The project is expected to be completed before winter.

The Cities Service Co. recently laid a line to Hutchinson, Kans.

■ ■

Natural Gas For Albion

The city of Albion, Ill., has granted a 25-year franchise to W. R. Stinnett, Centralia, Ill., to supply the city with natural gas. Mr. Stinnett plans to construct a distribution system and get gas from the Storms field in White County.

Tennessee Transmission Co. Seeks To Amend Petition

THE Tennessee Gas & Transmission Co., Chattanooga, Tenn., has filed with the Federal Power commission a petition to amend its application for a certificate of public convenience and necessity for the construction and operation of a natural gas pipe line from Northern Louisiana to Knoxville, Tenn., to include the city of Asheville, N. C., and 31 other Tennessee towns and cities.

The petition to amend alleges that the construction of the proposed line will materially aid in carrying forward the program of national defense growing out of developments in the European war by providing cheap and efficient fuel essential for industrial processes in an area not now served with natural gas and which is developing rapidly industrially.

The proposed line as described in the original application filed April 26, would extend from the natural gas fields in Northern Louisiana to Nashville, Chattanooga, Knoxville and other cities and communities adjacent to the proposed line within the state of Tennessee.

The Chattanooga Gas Co. brought out that it was ready to sign a contract with the Southern Natural Gas Co. which would pipe gas for distribution. The Tennessee Transmission Co. obtained a delay and then carried its fight to the Federal Power Commission. The commission ordered that a public hearing be held on September 4, 1940.

■ ■

Natural Gas Pipe Line Lets Contracts For Extensions

Contracts are being let for major extensions to the pipe line system of the Natural Gas Pipe Line Co. of America, Chicago, Ill., W. A. Jones, president, announced recently. The extensions will be embraced in two operations: Extension of facilities to northern Illinois and Wisconsin markets not now served with natural gas, and extension of pipe line facilities into Texas Panhandle and Kansas and Oklahoma gas fields.

The company said the construction will double existing pipe line facilities. Mr. Jones, who is also president of the Cities Service Co., New York, N. Y., said no immediate public financing will be involved.

■ ■

Panhandle Eastern Places Large Coupling Order

The National Supply Co. of Pittsburgh has received an order for 1500 20-in. and 5500 24-in. couplings to be used on the pipe line construction projects of the Panhandle Eastern Pipe Line Co., Kansas City, Mo. Only last July Panhandle Eastern completed a $3,500,000 project involving the construction of nine loop lines along their facilities which carry natural gas from the Texas Panhandle to the system of the Michigan Gas Transmission Corp. at the Illinois-Indiana state line, from whence the fuel is delivered to Detroit.

■ ■

Natural Gas Franchise Is Granted by Tonkawa, Okla.

Tonkawa, Okla., July 16 voted to grant a 20-year natural gas franchise to the Consolidated Gas Utilities Corp. of Oklahoma City.

The company, 12 years ago, took over a franchise held by the Oklahoma Northern Utilities Co., now expired.

East Ohio Gas Co. Granted Permission to Build National Gas Liquifacation Plant

THE East Ohio Gas Co. has obtained permission from the City of Cleveland for the immediate construction of the world's first plant to store natural gas in liquid form to be erected at the company's works at E. 62nd St. and Lake Erie, according to word from H. E. Eckes and C. F. Turner, chief chemist of the company. (See *GAS*, July, 1940, p. 20.) The new storage facilities will take care of excessive peak loads, even on an hourly basis.

The new plant ties in with the national preparedness program in that it will insure a steady flow of gas to industrial consumers even at peak activity, according to company president C. E. Gallagher. On one peak day last January the company was required to shut down industrial consumers in meeting a peak demand for 240 million cu. ft. of gas.

The men who have played prominent roles in the development of this liquid storage process are H. C. Cooper, former president of the Hope Natural Gas Co. and now consulting engineer for Gas Companies, Inc., Pittsburgh, Pa.; W. E. Steinwedell of the Gas Machinery Co.; and C. E. Gallagher, president, and W. G. Hagan, vice president and general manager, East Ohio Gas Co., Cleveland.

The process of storing gas in liquid form is new as far as the gas industry is concerned, although some of the steps in the process are the same as those employed in the liquefaction process at the Helium plant, at Amarillo, Texas. The gas will first be compressed under 600 lbs. pressure and then liquefied by cooling to 250° below zero. The cooling process involves boiling by ethelyne and ammonia. Restoration of the liquid to its normal gaseous form is accomplished by applying steam around the pipes through which the liquid flows from the tank. The liquefaction process does not alter the gas in any way.

The liquid gas will be stored in three spherical, 57-ft. diameter tanks, each with a capacity of 250,000 cu. ft. of liquid gas, which amount is equal to 150,000,000 cu. ft. of natural gas. The reduction in volume from gas to liquid is 600 to one, and the combined storage of the three tanks is 1,875,000 gals. of liquid gas. These tanks, which are to be built by Republic Steel Corp., will be constructed of a special nickel steel and will be lined with cork 2 ft. thick.

Gas Machinery Co. of Cleveland has the general contract for the construction of the new plant. The building, which will be 145 ft. long by 26 ft. wide, will house the compressors, pumps, and other apparatus, including steam boilers developing 1000 hp.

The East Ohio company serves 508,000 customers in 64 communities along a 750-mile 12-in. and 20-in. transmission system. Among the cities served are Cleveland, Akron, Canton, Massilon, Warren, Barberton, Wooster, and the suburban cities to Cleveland. Four main transmission lines bring gas to the company's system, 75% of the gas coming from West Virginia through the lines of the affiliated Hope Natural Co., while 25% of the gas comes from the company's own production and from purchased gas.

■ ■

Montana-Dakota Co. Makes Change In Montana Line

Otto H. Bundy, manager of the Bowdoin division of the Montana-Dakota Utilities Co., Minneapolis, Minn., announces that a complete change has been made in plans for the 100-mile natural gas line from Fort Peck to Glendive, Mont.

The original plan was to build the line from the Fort Peck terminus southeast to Glendive, but the revised program calls for the line to go east from near Glasgow through Nashua and Frazer to Wolf Point, and then turn south. A feeder line will be constructed from Wolf Point east to Poplar.

■ ■

Work on Booster Station Started in Michigan

The Consumers Power Co., Jackson, Mich., and the Michigan Consolidated Gas Co., have started construction of a booster station in the Six Lakes field in order to maintain line pressures of 425 lbs. Necessitating the construction of the station is the fact that reservoir pressures have declined to a point where adequate gas volume cannot be pushed through the line in seasons of heavy demand.

■ ■

New Holder For Indianapolis

The Citizens Gas and Coke Utility, Indianapolis, Ind., announces that a new 12,000,000 cu. ft. gas holder, of the waterless, piston type, will be completed for the city of Indianapolis by January 1, 1941, at a cost of $700,000.

■ ■

New Lone Star Gas Co. Line

Lone Star Gas Co., Dallas, Texas, has started construction of a 27-mile gas line from the gas field north of Opelika to the main line system at Trinidad. The 12-in. line will be constructed by the pipe line department of the company.

Geochemical Prospecting

The Latest of Exploration Methods Used in the Search for Gas and Oil

• **S. E. SLIPPER, consulting geologist, Calgary, Alberta, Canada, in a paper, "Geochemical Prospecting," presented before the 33rd Annual Convention of the Canadian Gas Association (Pacific Coast Gas Association participating), at Jasper Park Lodge, Alberta, Canada, July 3, 4, 5, 1940. —(Abstract by G A S.)**

GEOCHEMICAL prospecting is the latest of all exploratory methods to be used in the search for oil and gas. It is more often and also more correctly called (1) soil surveying, (2) ground gas surveying or (3) microseepage surveying. Most of the ideas are well known; that which is new consists in the development of a systematic theory and technique of application to the discovery of oil and gas. Essentially it consists in collecting samples of the surface soil or of the upper formations and analyzing for hydrocarbon gases and compounds which are said to indicate the occurrence of petroleum at depth. A variation of this is to collect the surface gases or shallow gases by pumping them from the upper beds and analyzing for hydrocarbons.

Geochemical gas surveying has three essential divisions, each of which had to be developed before the art could be considered practical. First, the basic theories had to be coordinated into a working hypothesis. Second, highly precise analytical methods had to be devised and improved and, third, practical field methods for the collection of samples were necessary.

The visible natural gas and oil seepage is evidence that gas or oil exists underground somewhere in the surrounding locality. The source may not necessarily be directly beneath the surface location of the spring; it may have a shallow or deep origin, and it may or may not proceed from an accumulation of commercial size. Nevertheless the proof is direct that gas or oil in large or small amounts does occur. Of course there are seepages of gas which are not natural (hydrocarbon) gas. Such gas may "seep" from coal deposits or marshy beds and in these cases which are very frequent, the seepage does not have any significance.

Special circumstances must exist in order to make a gas seep visible and in general a gas seep is not easily found unless shallow still water covers the exit of the gas so that visible bubbles may be noted. If the water is too deep the pressure will prevent the bubbles; if the water dries up no agitation is observed. There must be many surface gas seeps which have never been discovered. It is the conviction of many observers that all oil and gas accumulations have an emanation of gas spreading outward from the pool. These emanations in general are extremely minute (microseepage) though occasionally of visible proportions. This is the fundamental idea of microseepage surveys. It stands upon the fact that oil and gas accumulations are, with few exceptions, found in sedimentary deposits and all sedimentary rocks are porous.

The following are the two general principles on which gas surveys are based:

> Natural gas mixtures permeate and diffuse upward from oil and gas accumulations but do so at a greater rate of speed in zones of tensional strain (*i.e.*, where fractures, faults, open joint planes occur) and there are therefore greater concentrations of the heavier constituents in surface beds along zones than in the surrounding area. Such tensional strains occur on anticlines and other oil structures, therefore, if a structure contains oil it will be detected by ground gas surveys on the structure.
>
> Natural gas mixtures in permeating and diffusing upward from a petroleum source are stratified according to the density of the individual gases; the heaviest hydrocarbon gas is relatively closest to the source, while the lightest is farthest from the source at a given time. Hence if a set of soil samples or well samples show a progressive increase in the ratio of propane to the methane and ethane then the oil accumulation is in the direction of the increasing ratio.

The geochemical method claims to be a direct method, useful in discovering the occurrence of oil and gas accumulations irrespective of the existence or non-existence of favorable structure. In theory then it should eliminate chance in exploration. In practice, of course, this will not be so. However, it is believed that it will measurably reduce the odds against the prospector. At present the method is not more than qualitative; it cannot definitely determine beforehand the quantity of fluid in the source from which the emanation issues and consequently does not forecast the commercial value of the source though deductions can be made from the intensity and area of the seepage ground. Again it cannot determine the permeability or porosity of the reservoir rock containing the oil or gas from which the emanation proceeds.

Most of the systematic methods of ground surveys consist in taking "scoop" samples of the soil immediately below the grass roots along surveyed lines at intervals of four or more per mile. These samples are then taken to the laboratory in sealed containers and the gas extracted for analysis. In the author's opinion this method is applicable only in such areas where the ground below the grass roots is the residual soil (*i.e.*, composed of disintegrated country rock). In areas covered with drift or recent deposits it is necessary to take samples from the formation below the overburden. To do this short drill holes are spaced across the prospect and samples are taken from the drill cores or cuttings for analysis.

Not until low temperature fractional distillation methods of gas analysis were invented could practical microseepage analyses be made. Combustion analyses cannot determine the constituents of a gas mixture with the necessary precision. Even these newer methods had to be improved and redesigned in order to reduce the time and expense of analyses. Several variations of the original apparatus have been devised until now fractional low temperature analyses of a high order of accuracy can be made rapidly and cheaply.

The mass spectrograph for analyzing minute quantities of gas mixtures has recently been perfected. This apparatus obtains marvelous results and probably will add greatly to the future usefulness of geochemical surveys.

■ ■

World's Largest Gas Plant Planned For Louisiana

L. H. HUNT, Dallas, Texas, announced that the world's largest natural gas casinghead gasoline plant will be constructed by a group of oil operators in the Cotton Valley, La., field. Application for a permit to build has been applied for from the Louisiana Conservation Commission.

The plant will cost $18,000,000 and will have a capacity of 150,000,000 cu. ft. of gas daily, from which will be extracted 10,000 barrels of natural gasoline daily.

The plant will be jointly owned by Mr. Hunt; the Ohio Oil Co., Findley, Ohio; Magnolia Petroleum Co.; United Gas Co.; Stanolind Oil & Gas Co., Tulsa, Okla., and the Oliphant Oil Co. The gas-distillate area of the Cotton Valley field will be formed into a unit for recycling.

Our Job in Dish Sterilization

An A.G.A. Report Suggests Improvements Based on a Study of Gas-Fired Water Heating Installations at the New York Fair

WIDENING interest on the part of food purveyors in the newer techniques of effective utensil sterilization lends especial significance to a 40-page printed report just released by the Volume Water Heating Committee, Industrial Gas Section, American Gas Association — a report which makes an engineering analysis of all installations for "180° Water Heating at the New York World's Fair." Copies are obtainable at 15 cents each from the A. G. A., 420 Lexington Avenue, New York, N. Y.

Implied conclusion of the bulletin is that the stringency of enforcement of the World's Fair Special Sanitary Code as applied to the diverse restaurants and food purveying concessions in the Fair area "showed that the so-called sterilization currently practiced by eating establishments the country over will, by and large, not be adequate as public health regulations and their enforcement are tightened in the future."

Fortunately, the restaurateurs, utility men, engineers and contractors involved in the planning and maintenance of the approximately 300 hot-water-sterilization installations operated in the World's Fair area during its first season, have been able to devise new sterilization hook-ups which are both practical and able to perform in compliance with the strictest utensil sterilization laws that may be reasonably expected. Such satisfactory systems are described in detail in the A. G. A. report. Also included are individual data sheets giving complete equipment lists, fueling procedures, dish-handling capacities, operating data, and other pertinent information on each of 56 successful sterilizing installations used by World's Fair purveyors in almost as many classifications. The nature of each establishment and its seating capacity are also noted.

76 Case Studies Presented

According to A. V. Leudemann, sales manager, Mears-Kane-Ofeldt, Inc., of New York (who made the initial presentation of the report in behalf of Committee Chairman Lawrence E. Biemiller, Consolidated Gas Electric Light & Power Co. of Baltimore, on May 30 at the annual A. G. A. Hotel, Restaurant and Commercial Gas Sales Conference in Atlanta), "We have studied in detail approximately 76 installations of 175° to 200° water heating equipment at the World's Fair, excluding 29 applications at frozen-custard concession stands and at least 225 tank-type sterilizer installations in some 208 locations."

• **THE VOLUME WATER Heating Committee of A.G.A.'s Industrial Gas Section under Chairman LAWRENCE E. BIEMILLER, Consolidated Gas Electric Light & Power Co. of Baltimore, has just issued a 40-page booklet entitled "180° Water Heating at the N. Y. World's Fair." Excerpts from the booklet herewith published deal with the ability of water heaters to comply with the increasingly stringent requirements imposed by sanitary codes. This topic has been previously treated with in G A S (February, 1940, page 19) by J. M. KRAPPE, associate in gas engineering, Purdue University, in an article, "The Formation of Scale and Methods of its Prevention in Water Heaters." — Editor.**

The 76 installations referred to fall in two separate classifications: (1) those in which water is heated from 40° to 180-200° F. without the use of a booster heater; and (2) those in which the water is heated in two stages, the second stage taking the water for sterilization purposes from a general utility level of 140° F. to the legally required level of 180-200° F. Installations are about evenly divided between the two types. The accompanying illustration gives sketches of five representative hook-ups used on various sizes of jobs up to 20,000 dishes per hour. None of the equipment or controls involved is specially built — the "special" qualities of each installation lying only in the engineering of the system as a whole.

Under the heading of "Dish Washing Machine Developments," the report offers the following comments regarding the inadequacies of certain popular systems, and means of circumventing them:

"Water temperatures of 140° F. are ideal for ordinary dish washing operations. Rinse water temperatures of 175° or higher must be maintained in order to obtain proper sterilization.

"Dish washing machines, as built prior to the World's Fair, were so designed that the rinse water overflowed into the washing compartment. While this arrangement might be satisfactory with rinse water temperatures well below 160° F., with temperatures of 180° or above difficulties are encountered. The overflow action of 180° rinse water will soon raise the temperature of the water in the washing compartment so high that remnants of food would become solidly baked on the utensils being washed. For this reason, dish washing machines of this type could not be used unless their design was so changed that the rinse compartment was separated from the washing compartment.

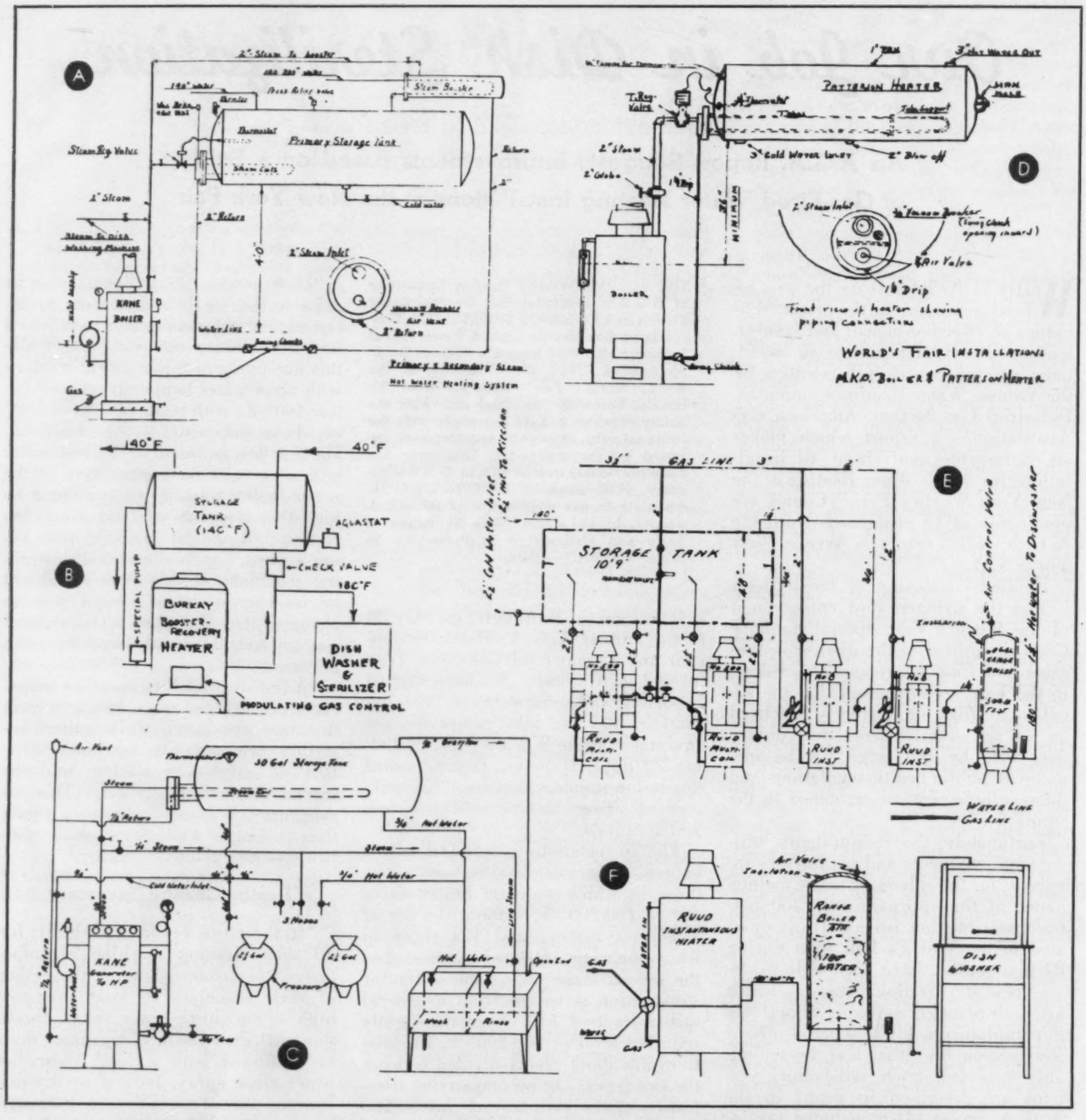
"A few dish washing machine manufacturers changed their design to meet this new condition, while others installed two separate machines — the first to serve as a washer, and the second as a rinser entirely. This arrangement is necessarily more costly than a single washing machine with two separate compartments.

Design Change Necessary

"It, therefore, becomes advisable for all dish washing machine manufacturers to consider changing the design of their machines to meet this new high temperature rinse water condition. All dish washing machines must be equipped with a final clear hot water rinse spray, located at the discharge end of the rinsing compartment, and such spray water maintained at a minimum of 175° F., if the sterilization requirement, such as that at the World's Fair, is to be met.

"Evidence of the advisability of supplying 200° rinse water temperature is indicated in that portion of the World's Fair Sanitary Code reading as follows: '. . . rinsing or spraying or immersing in clean water of 200° F. for a period of 30 seconds; or in hot water of a temperature of not less than 175° F. at all times for a period of one minute.'

"From this it is quite apparent that reductions of approximately 50% in high temperature rinse water consumption can be attained with water temperatures of 200°, or an increase of



Sketches of N. Y. World's Fair dish, glass and utensil sterilization-water hook-ups capable of complying with strictest public health regulations. A, F and E use "boosters" on general-utility storage-tank water supplies to develop extra-heat for sterilization. A, C and D employ gas-fired steam boilers; B, E and F employ gas-fired water heaters. B uses new heater incorporating general-utility heater and "booster" heater in one appliance.

100% in capacity of the dish washing machines. Several locations at the Fair were permitted to speed up their washing equipment by maintaining 200° rinse water.

"The ultra-violet-ray method of sterilizing has not been used extensively at the Fair. There is one application, that of the Coca Cola Exhibit, where all glasses, after they have been properly washed and sterilized in hot water, pass across this ultra-violet-ray in view of the public."

Because of the different sterilization requirements of frozen custard standards and concession booths, as over and against normal restaurant or club operations, this group of World's Fair sterilization installations is treated in a separate section of the report. In view of the rather complete engineering data offered by producers of tank-type sterilizers, information on the 208 installations of this variety of unit is not given as completely as for the 76 specially-engineered, high-capacity set-ups. The tank-type installations are, nevertheless, totalled and described in general.

Purpose of the report is "to collect and publish for the use of purveyors, engineers, contractors, gas men, etc., all available data and information pertaining to the installation of gas-fired equipment at the New York World's Fair 1939 for furnishing water of sufficiently high temperature to comply with the requirements of the Sanitary Code."

• A. P. KELSO, Southern California Gas Co., Los Angeles, Calif., is the author of the Pacific Coast Gas Association's Gas Utilization Data Bulletin No. 65, produced in October, 1939. This bulletin is entitled "Continuous Conveyor Tunnel Type, Direct-Fired Battery Plate Drying Oven."—Editor.

A 75-foot gas-fired battery plate drying oven designed and installed by the Industrial Oven and Equipment Co., a division of Dalton Mfg. Co., for the United Battery Mfg. Co. of Los Angeles. Plant Owner C. H. Robinson inspects the plates as they pass through the oven.

A BATTERY PLATE DRYING OVEN

IN THE process of manufacturing the storage battery, a most important function is that of producing positive and negative plates which are basic to the battery cell unit. Each plate is made up of a metallic lead casting in the form of a grid which is coated or pasted with wet active lead paste and even dried to firmly set the applied emulsion.

The principal constituent of the positive plate paste is peroxide of lead (red lead), while that of the negative plate is litharge or spongy metallic lead. Proper drying of this paste application is very important to the life and performance of the finished battery.

This oven was designed to provide a flexible, continuous, economical method of plate drying, to improve production capacity, to improve working conditions, and to make possible the manfacture of a better plate.

The oven built for the United Battery Manufacturing Co. of Los Angeles is of a traveling conveyor, tunnel type, constructed in three connected sections. Section one is the "steam bath" and sections two and three are the "dry heat" portions controlled by two Robertshaw thermostatic temperature controls (Model XR ¾-in. Throttling Type). Design and construction were by the Industrial Oven and Equipment Co., a division of Dalton Manufacturing Co. of Los Angeles, whose patents covering certain features of the oven are now pending.

Oven Dimensions

The body of the oven is 75 ft. long, 24 in. wide and 41 in. high and weighs approximately 15,000 lbs. Each section is 25 ft. in length and internally separated from adjoining sections by means of an insulated wall with an opening just large enough to pass two plates side by side cast as an integral unit and vertically suspended from a roller chain type conveyor operated by a 3-hp. reduction gear drive. The oven has three pyrex glass doors, one per section, with concealed interior lighting, permitting inspection or access to the plates as they pass through each section. The entire oven top is removable by sections, to facilitate cleaning or making repairs. Three Weston indicating thermometers, one per section, are installed to permit an immediate check of section temperatures.

The outside of the oven is fabricated from 20-gage steel plate on a steel frame. The oven has 3 in. of mineral wool insulation and interior walls are of 18-gage long terne leaded sheets. The leaded sheets are to prevent interior corrosion. The frame legs hold the body of the oven 7 in. off the floor.

Oven inlet is also limited to the same size opening as between oven sections. Oven outlet is more open, allowing a gradual cooling of the finished plate.

The first section is provided with piping for direct application of steam to the oven atmosphere. This steam is generated by a 1-hp. automatic gas-fired boiler and is introduced under about 5 lbs. pressure above the pipe burners by means of a drilled injector pipe having a water drain at one end.

All three sections are fired by a total of 12 1-in. double row drilled pipe burners 5 ft. in length. Each burner piped from the section header extends lengthwise midway under the path of the plate travel. Section one has three burners, section two has four and section three has five. Burners are located approximately 5 in. above the oven bottom through which all secondary air is introduced. The oven operates entirely on natural draft. Burners are drilled No. 32 M. T. D. at ½-in. spacings on each side. Each burner orifice is drilled No. 41 M. T. D. The oven is now operating under 10-in. w. c. gas pressure.

Flue gas release from each section is through a series of 3-in. openings in the side, interconnected to a sheet metal breeching which is vented by means of a dampered 8-in. stack.

There are nine 3-in. openings from section one, 12 from section two and 15 from section three. The oven was designed for a maximum of 350,000 B.t.u. per hour input.

Plate Pasting Machine

The oven is operated in conjunction with an automatic plate pasting machine which has a production range of 3500 to 6000 single plates per hour. However, instead of being designed for production operation of a single plate, the machine and oven handle a cast unit of two plates by vertically suspending them on the conveyor from extended shoulders (lugs) on each side

TABLE NO. 1. LOG OF OPERATION

Day	Gas Consumptions, Cu. ft. Oven	Boiler	Total	No. of Plates Dried and Size*	Cu. Ft. of Gas/1000 Plates	Aver. Oper. Temp. (Degrees F.) Sec. 1	Sec. 2	Sec. 3
First	2,080	1,000	3,080	11,000–1/16S		180	275	225
				5,000–5/32	192	250	400	350
Second	2,000	640	2,640	22,800–1/16A	116	175	280	220
Third	1,730	920	2,650	23,000–1/16A	115	175	270	225
Fourth	1,700	770	2,470	20,200–5/64WR & 5/64LR	122	190	325	270
Totals	7,510	3,330	10,840	82,000				

*SIZES: 1/16S is a plate 1/16 in. thick x 4 1/16 in. high x 5 5/8 in. wide.
5/32 is a plate 5/32 in. thick x 4 3/4 in. high x 5 5/8 in. wide.
1/16A is a plate 1/16 in. thick x 4 3/4 in. high x 5 5/8 in. wide.
5/64WR is a plate 5/64 in. thick x 4 3/4 in. high x 5 5/8 in. wide.
5/64LR is a plate 5/64 in. thick x 4 1/16 in. high x 5 5/8 in. wide.

of the two-plate unit. Oven heat is controlled according to the type of plate and according to the rate of travel of the conveyor.

The humid atmosphere of section one allows the fresh lead oxide pasting to start its drying process under conditions most favorable to producing a finished plate, free or almost free from harmful surface cracks or checks. Humidity is maintained close to the saturation point. Passing from section one to two with a higher temperature and a strictly "dry" heat, the drying process continues to section three, where a lower "dry" heat temperature is maintained. In general, the experience has been that the paste tends to "set" in section two and tends to dry out in section three.

The above outlines the operating procedure usually followed in this plant. The old method of pasting, dipping, draining, drying, buffing and final clean-up required considerable handling. The work was more hazardous and much less efficient. The new method has made possible a more uniform job on a production basis and has meant that fewer plates are rejected as unsatisfactory upon final inspection.

Gas Consumption

An analysis of the natural gas consumption (1120 B.t.u. per cubic foot) per thousand plates dried, taken over four operating days, is as shown in Table No. 1.

The immediate results and advantages linked with the production operation of this oven in this plant were as follows:

1. Production cost of plates was reduced to 29.5% of the former cost.

2. Production rate of plates was increased 375.0%.

3. Lead hazard to workmen was materially reduced because of elimination of handling.

4. Cleaner factory conditions were possible — a distinct health and working advantage to workmen.

5. Loss of material and repeat operations were materially reduced.

6. Insulated oven construction has meant a cooler and a more convenient plant to operate.

7. Buffing (cleaning) of all plate "lugs" was no longer necessary as before, contributing to the reduction in handling cost.

8. The humid atmosphere ("steam bath") of the first oven section eliminated the former costly method of "flash dipping" in sulphuric acid, which method was more costly.

9. The "steam bath" has permitted manufacture of a better and more uniform plate.

The general design of the oven is perhaps adaptable to many other oven heat applications. It is simple to start, has a preheating period of only a few minutes, is easily controlled by thermostat settings, is compact and efficient in its operation.

Natural Gas By-Product Plays Role In Synthetic Rubber Manufacture

A NEW method of manufacturing tires in which 50 to 100% of the natural rubber is replaced by a new synthetic, Ameripol, a copolymer of butadiene from petroleum gases and another material obtained from natural gas and air, has been announced by John L. Collyer, president of the B. F. Goodrich Co., Akron, Ohio.

In speaking of the potential danger to America's defense and industry in the possibility that our rubber supply might be cut off, Mr. Collyer also said that if the industry were to replace with Ameripol the natural rubber in the tire treads and sidewalls alone, it would reduce by approximately one-half America's consumption of the natural product. He also pointed out that its costs are greater than rubber, so it may be some time before Goodrich or any other organization can go into mass production of Ameripol. Present production is about 500 to 1000 tires per week at about one-third increased cost.

Dr. W. L. Semon, the discoverer of Koroseal and one of the group of chemists who developed the new product, revealed that "the basic material is American petroleum, from which butadiene is separated. This is mixed with other ingredients prepared from natural gas and air and then made into a milky emulsion, using soap from American agricultural sources. Upon heating and agitation, these ingredients react to form an emulsion of synthetic rubber, which is similar to the latex obtained from rubber-producing trees. From here on, the process of obtaining a sheeted rubber is like that used for natural rubber."

According to the best authenticated figures, United States synthetic rubber consumption last year amounted to 1700 tons against a consumption of natural rubber totaling 592,000 tons.

A semi-commercial plant is in operation and Goodrich is constructing a plant, to be ready in the fall, which will produce several tons of Ameripol daily.

■ ■

St. Paul May Have Natural Gas For Industrial Uses

The Minnesota Gas Corp., St. Paul, Minn., is seeking, in addition to a 20-year franchise for the distribution of industrial natural gas, a one-year permit to facilitate construction of the industrial gas belt line this summer, according to William D. Weidlein, general manager.

The object of the belt line is to serve the larger industrial establishments in the Midway, east side, and riverfront districts of St. Paul. The line would be about 12 miles long and cost about $200,000.

The Minnesota Gas Corp. suggests that if it is given a franchise, it will be ready to negotiate for the purchase of the Northern States Power Co.'s distribution system now used for manufactured gas.

Just one of the panels of photographs submitted in Ohio Fuel Gas Co.'s Amateur Photographic Contest.

Everyone Admires A Fine Photograph

By HAROLD WARD
Ohio Fuel Gas Company

RECOGNIZING the ever increasing public interest being shown in photography today, the Ohio Fuel Gas Co. of Columbus, Ohio, recently conducted an unusual promotion designed to contribute to its public relations program. Advocated by E. M. Tharp, general manager of the Ohio Fuel Gas Co., and Frank S. Williams, district manager, both enthusiastic amateur photographers themselves, an Amateur Photographic Salon was planned and staged during April and May. The project was vigorously promoted under the direction of Ernie Marquardt, who is camera editor for the *Ohio State Journal*, Columbus newspaper. Publicity stressed the fact that the contest was for amateurs only and that five cash prizes and ten honorable mentions would be awarded for the fifteen prints selected as the best in the show. Specific rules and entry blanks were made available for all amateurs through camera clubs, camera shops, and at the gas company office. In order to have an attractive and uniform showing, entries were required to be made in standard salon size pictures and mountings. Other requirements and limitations were specifically set forth under rules of the contest.

A large amount of newspaper publicity was given this promotional effort along with personal appearances by Mr. Marquardt at the many camera clubs in central Ohio. The company's regular radio program, also, was used in publicizing the event.

The deadline for entries, Wednesday, April 24, 1940, will long be remembered by us as "the day of deluge." That the promotional effort produced results was proven when we found that 258 amateur photographers in Columbus and central Ohio had submitted the astounding total of 782 prints. This immediately established the salon as the largest event of its kind ever held in central Ohio.

The photographs were scheduled to be exhibited from May 1 to June 1. We wanted to display as many prints as possible, and at the same time make the exhibit unusually attractive. Nine panels, covered with black velourette, were so constructed in three tiers in our central lobby to provide space for 155 of the best pictures submitted.

The biggest task was the judging of the 782 entries. The three judges were Walter W. White, associate, Royal Pictorial Society, of Newark, Ohio, A. Lloyd Reber, professor of photography of Ohio State University, and Ed W. Ludwig, camera store owner and past president of the oldest Columbus camera club. To give some idea of the enormity of their task, it required over eight hours to complete the judging.

The display of 155 prints caused many favorable comments and a great deal of interest was shown by customers, and by our own personnel as well. Anticipating that many people would enjoy seeing this display after office hours, we kept our lobby open Tuesday and Thursday evenings and Sunday afternoons throughout the month of May. Although we cannot hope to give the actual number of individuals viewing the exhibit, we can safely say that well over 1000 visited it after office hours and that more than 50,000 persons saw the Photographic Salon during the month of May.

From our observation, one pertinent point was evident. The average customer, coming to our office, hurries in to transact his business, and hurries away. This was definitely not true during May, when most customers lingered in our lobby to look over and admire the exhibit.

While it is difficult to measure directly the results of such a promotion, we feel certain that its public relations value to the company more than justified the effort and expense involved.

P. U. A. A.'S ANNUAL CONVENTION

THE Public Utilities Advertising Association, directed by E. K. Hartzell, East Tennessee Light & Power Co., Bristol, Tenn., president of the association, held its annual convention at the Palmer House in Chicago, Ill., June 24-25. Harold J. Rowe of the Iowa Electric Light and Power Co., Cedar Rapids, Iowa, was elected president of the association and public utility prize winners in the annual better copy contest were announced.

Other officers elected at the convention are: First vice president, Al C. Joy, Pacific Gas and Electric Co., San Francisco, Calif.; second vice president, Clara H. Zillessen, Philadelphia Electric Co., Philadelphia, Pa.; third vice president, Thomas H. Spain, Public Service Corp. of New Jersey, Newark, N. J.; secretary, H. W. Olcott, Bozell & Jacobs, Indianapolis, Ind.; treasurer, Dale Remington, Wisconsin Public Service Corp., Green Bay, Wis.; director for one-year term, E. K. Hartzell; directors for three-year terms, Ted Ferguson, Dallas Power and Light Co., Dallas, Texas; J. V. Macdonald, Boston Edison Co., Boston, Mass.; and Howard F. Weeks, Consolidated Edison Co. of New York, Inc., New York.

A feature of the session was the announcement of the winners in the association's annual "better copy contest." Sixteen national awards were made to 13 companies in seven states. In addition, there was regional competition prior to the national contest in which awards were won by 46 companies in 25 states. This contest is the oldest organized advertising competition in existence today.

The list of national awards to gas company members as announced by T. H. Spain of Newark, N. J., chairman of the Better Copy Committee, is as follows:

Public Relations Newspaper Advertising — Consolidated Edison Co. of New York, Inc., for advertisement with headline, "How the Community Benefits from Consolidated Edison's Million-Dollar-a-Week Taxes."

Gas Load Building Newspaper Advertising—Amarillo Gas Co., Amarillo, Texas, for advertisement with headline, "Let Gas Do the 4 Big Jobs."

Gas Merchandise Newspaper Advertising — Washington Gas Light Co., Washington, D. C., advertisement with headline, "Amazing New Gas Ranges Win New Freedom for Women."

Employe Magazine — Niagara Hudson Power Corp., for publication, "Niagara Hudson News."

Employe Newspapers — Cincinnati Gas and Electric Co., for publication, "O-K News."

Special Booklets, Pamphlets, etc. — Michigan Consolidated Gas Co., Detroit, Mich.

Gas Window Displays — Southern California Gas Co., Los Angeles, Calif.

Radio Advertising—(First), Pacific Gas and Electric Co., San Francisco, Calif. (Second), Consolidated Edison Co. of New York, Inc.

Among the speakers at the convention were Edward J. Doyle, president, Commonwealth Edison Co., Chicago, ill.; R. W. Queen-Hughes, Winnipeg Electric Co., Winnipeg, Canada; Miss Ada Bessie Swann, director, Home Service Center, Crowell Publishing Co.

Clyde Bedell, advertising lecturer, Northwestern University, School of Commerce, presented a paper entitled "Can You Tell Good Advertising When You See It?"

Gaylord B. Buck, vice president and general commercial manager, Public Service Co. of Colorado, Denver, spoke on "What Sales Management Expects From Advertising." He said industry can progress no faster than its advertising.

▲

The National Award for Gas Merchandising newspaper advertising was won by Washington Gas Light Co., Washington, D. C.

▲

Walter W. R. May, director public relations, Portland General Electric Co., Portland, Ore., gave an address called "Riding Out of the Storm." He described the advertising technique used by his company in combating public ownership.

Howard F. Weeks, assistant director, Editorial Bureau, Consolidated Edison Co. of New York, Inc., presented the history of the Public Utilities Advertising Association.

The following contributed to a symposium discussion on "What Advertising Management Wants From Sales Executives." Dale Remington, advertising manager, Wisconsin Public Service Co., Green Bay, Wis.; A. L. Herrman, advertising manager, Virginia Electric and Power Co., Richmond, Va.; Wilmot Squier, advertising manager, Washington Gas Light Co., Washington, D. C.; and R. I. Seymour, advertising manager, Kansas City Power and Light Co., Kansas City, Mo.

The association has published a 64-page booklet containing all of the national and regional prize winning advertisements. The 1940 book is larger and contains more material than previous booklets. Copies are $2.50 each and can be ordered from Thomas H. Spain, Public Service Electric and Gas Co., 80 Park Place, Newark, N. J.

OLD STOVE ALLOWANCE SALE
Amazing new Gas Ranges
WIN NEW FREEDOM FOR WOMEN...
'ATTENTION—EVERY WOMAN WHO COOKS! Here's a really modern way of cooking you'll want to know more about right away.
This advance in cooking routine is made possible by the marvelous new Gas Ranges. You just can't imagine how different they are—how much of the cooking job they'll take off your hands. Why, to own one of these capable Gas Ranges is just like having a helper in it's kitchen!
You'll "Ah" with delight when you see all their thrilling automatic features and the pull-out, smokeless broilers. And when you realize what these up-to-the-minute improvements can mean to you in comfort, money-saving and finer meals, you'll want a Modern Gas Range in your kitchen without delay! And here's your chance to own one at a saving! Come in and see the beautiful bargains pictured at the right and the wide variety of other models included in this big sale. Better drop in today!
THIS BEAUTIFUL GLENWOOD GAS RANGE
WAS 109.90
LESS OLD STOVE ALLOWANCE 15.00
NOW $89.90
$10-$15-$20 ALLOWANCE FOR YOUR OLD STOVE on a MODERN Gas RANGE
(allowance depends on value of new range purchased)
GAS IS YOUR QUICK, CLEAN, ECONOMICAL SERVANT
WASHINGTON GAS LIGHT CO.
411 10th St., N. W. • District 6800 • 1320 Wis. Ave., N. W.
6 COL. X 14 INCHES

10 YEARS OLD... THIS DURABLE VENT PIPE LOOKS GOOD FOR YEARS TO COME!

Long, dependable service features installation of J-M Transite Flue Pipe on this domestic gas-heating system . . .

SINCE 1930, this installation of J-M Transite Flue Pipe has been in steady service—constantly exposed to weather on the outside and corrosive fumes on the inside. Yet today, the venting system is in excellent condition . . . shows no signs of needing repairs or replacements.

That's the type of dependable service that home owners appreciate!

And J-M Transite Flue Pipe provides many other advantages in addition to long life. Made of asbestos and cement, it is 100% fireproof, cannot rot, rust or decay and effectively resists corrosion. Its unusual durability minimizes callbacks for servicing . . . keeps customers sold.

Furthermore, Transite's light weight, easy handling and complete line of fittings make installation simple, rapid and economical. For full details, write for Brochure TR-13A. Johns-Manville, 22 East 40th Street, New York, N. Y.

Fast Installation **is made with J-M Transite Flue Pipe because it is light in weight, easy to handle. And it is supplied in a complete range of sizes and fittings that speed up work, even in restricted working quarters.**

After Ten Years' **exposure to weather and corrosive fumes, this J-M Transite Flue Pipe installation is still in excellent condition . . . needs no maintenance. Permanent, economical venting systems like this back up your promises of dependable service from gas-heating systems.**

(unretouched photograph)

Johns-Manville TRANSITE FLUE PIPE

Ten Thousand Fe

That's How Far Gas Travels Th T
Second Submarine Line Replac ast

1. Out on the job. With a friendly smile, Manager P. E. Nicholls of Texas Cities Gas Co.'s Galveston District supervises work.

THE Texas Cities Gas Co., Galveston division of the Lone Star Gas Co., Dallas, Texas, completed in June the laying of the second submarine line across the Galveston Bay, according to L. B. Denning, Jr., vice president of the Community Natural Gas Co. and the Texas Cities Gas Co. This was the second 8-in. line replaced since 1938.

Galveston has used natural gas since 1929. When the Houston Natural Gas Co. constructed a natural gas line to Texas City which passed through La-Marque, 11 miles north of the city, a 14-in. line was laid from LaMarque to Virginia Point and then connected to two 8-in. lines running across Galveston Bay, a distance of 10,000 ft., and again connected to a 14-in. main which ran from the bay shore into the manufacturing gas plant in the center of the city.

The old manufactured gas company was chartered in 1856, and the plant was built shortly afterward. Coal was brought from England by sailing vessel, and cast iron pipe was also shipped from abroad. They continued to expand with the city until 1929, when natural gas was made available.

However, the first steel lines which were laid on the bottom of the bay were subjected to severe conditions of corrosion, both from the immersion in salt water and from galvanic and stray current electrolysis, and leakage developed. The leaks had to be clamped under water by a diver using diving equipment, and later, corrosion of the steel lines became so general that a number of sections of each of the 8-in. lines had to be replaced.

In the summer of 1938 it was decided that one of the 8-in. lines should be completely replaced. Cast iron pipe with a recently developed ball joint was used for replacement. This proving satisfactory, in the spring of 1940 the second 8-in. line was completely replaced with the same type of ball joint cast iron pipe. These lines are located 300 yards north of and parallel to the old causeway.

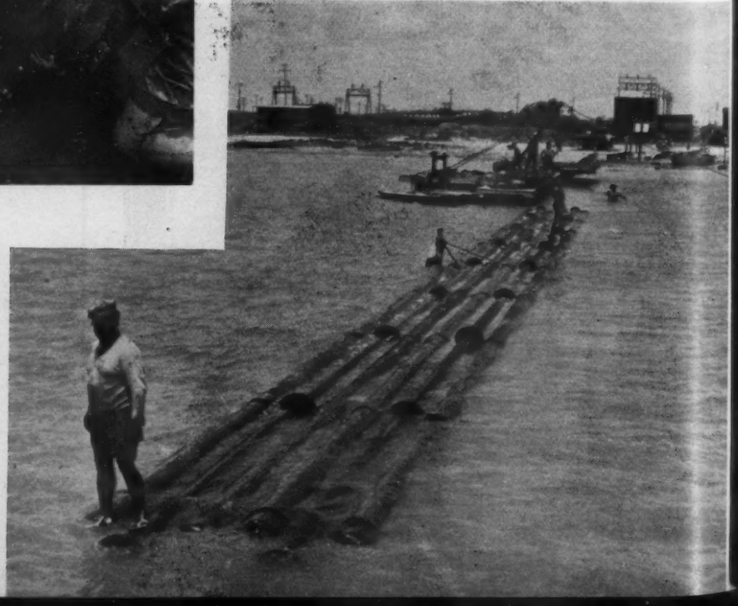
To facilitate construction, a pier sev-

2. This pipe is seaward bound as it is loaded on trucks on the mainland, transported to the pier to be made up in sections.

3. Each man knows his duty. And the pipe is rolled off the truck and down the board walk on its journey over the pier.

4. Who's all wet? "We are," say the workmen who are making up ball and socket joint after pipe has been pushed into place.

5. The life of a lumberjack. Even a northwest lumberjack would envy these men as the sections are made-up, ready for the tow boat which pushes them into the channel.



PRINT IN BINDING

Fe Under the Sea!

ls Th Texas Cities Gas Company's Replac ast June Under Galveston Bay

eral hundred feet long was built from Virginia Point shore line and used as a base for operations. Pairs of pontoons made of 14-in. pipe were used to support the sections of cast iron pipe by bolting them up alongside the pier. Each of these sections consisted of eight 16-ft. joints and weighed 800 lbs. After the eight-joint section had been bolted up and properly loaded on the pontoons, the pontoons were attached to a towboat and floated to the proper position and connected to the pipe that had already been laid. The ball joint construction of this pipe is such that the joints can be deflected to an extent of 12 degrees in any direction, which permits the easy handling and connection of the sections. After a new section had been connected to the pipe previously laid, the ropes supporting the section from the pontoons were cut, permitting the pipe to drop to the bottom of the bay.

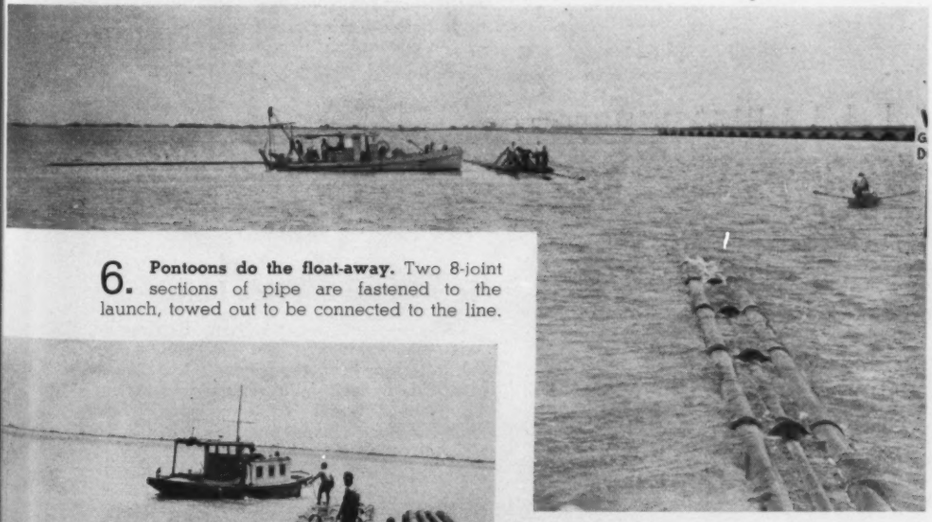
Cover for the pipe on the bottom was done by a diver descending with a high-pressure water jet and jetting the earth out from under the pipe permitting it to settle into the ditch thus made. The tidal currents rapidly filled this ditch with silt.

During the construction, which was completed shortly after June 1, one of the most difficult problems encountered was that of coping with the tidal currents which range in velocity from one to six miles per hour and frequently change direction within a few minutes. The floating equipment had to be carefully controlled and anchored in place so that the sections of pipe could be connected to each other properly and the direction of the line across the bay maintained. Weather on several occasions was so severe that operations had to be shut down.

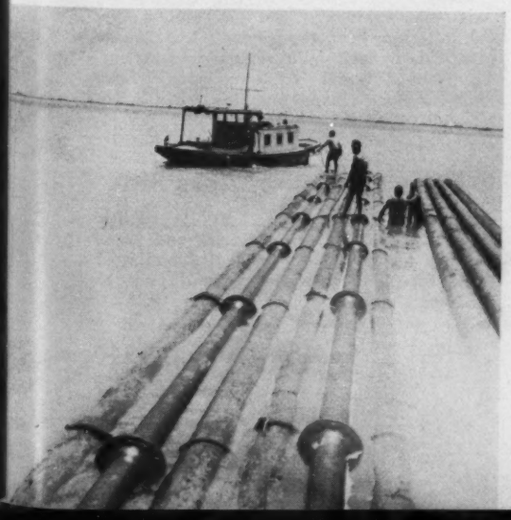
The other major problem was handling the 16-ft. joints of pipe weighing 800 lbs. Working quarters were so cramped that most of it had to be manhandled. The photographs on these pages tell the story of the laying of this submarine pipe line. Paul Cravens, Lone Star Gas Co., took the picture.

8. **Steady now, fellows.** The boat pushes the end of the made-up 8-joint, 6400-lb. section into place for connection to the line.

9. **Strong legs are needed** to walk the pipe down as Matt Doffing (left) and Manager P. E. Nicholls stand on the newly connected floated section and push raft along.



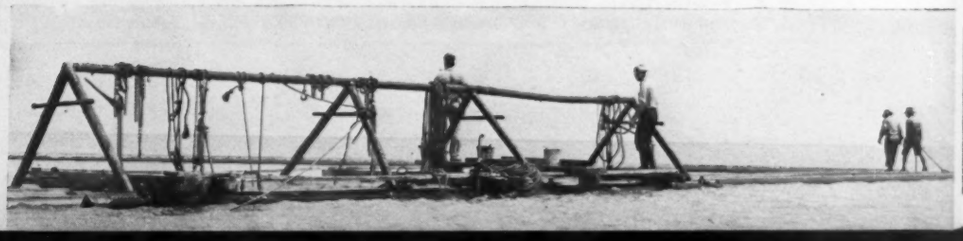
6. **Pontoons do the float-away.** Two 8-joint sections of pipe are fastened to the launch, towed out to be connected to the line.

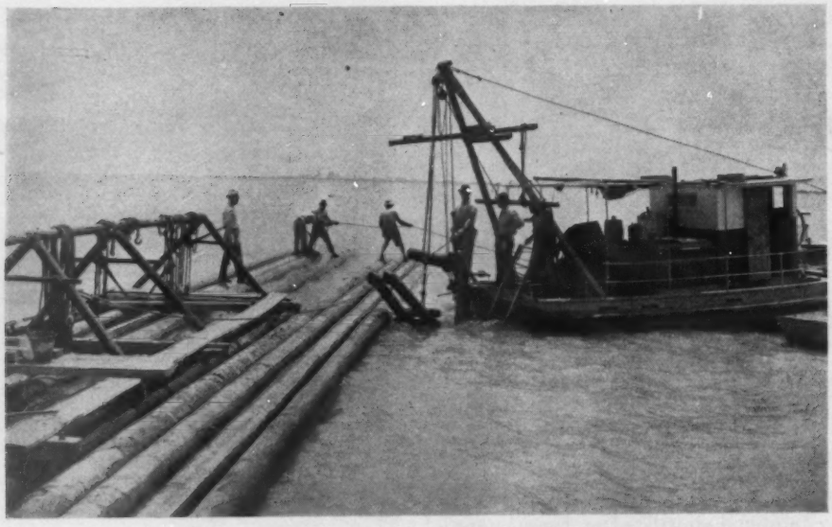


7. **A-sailing we will go** as the section is towed to the work raft where it is to be hooked up with line already constructed.

10. **To combat shifting tidal currents** and prevent drift from proper alignment, workmen are preparing to anchor the line.

11. **Tripping the light fantastic.** Workmen must frequently walk the pipe and pontoons. In rough weather work shuts down.





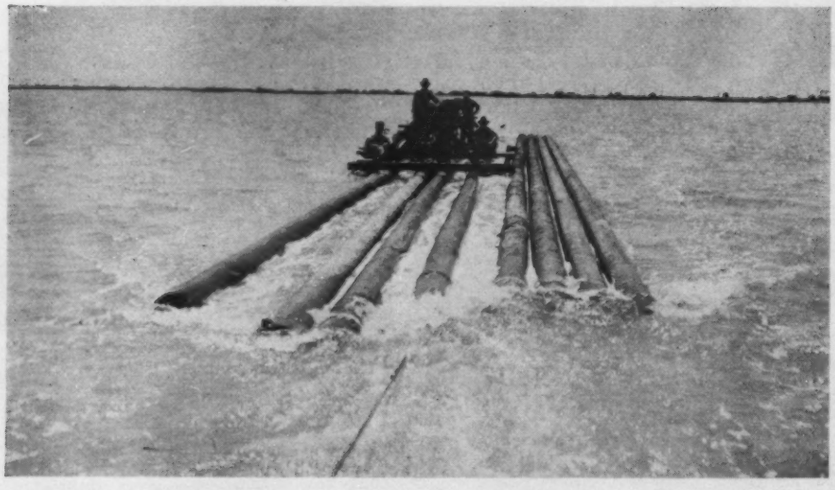
12. There'd be no gas for Galveston if pantywaists were on the job. For undersea work a diver is required to find the old line and for setting the new line. The old pipe brought to the surface will be towed to the pier to be reconditioned or junked.

13. Watch out below. Important is Captain Bob Hurley's work. A helper assists with the diving equipment which he provides.

Texas Cities Gas Company's Submarine Pipe Line Under Galveston Bay

(Continued)

Story and photographs through the courtesy of L. B. Denning, Jr. and Will C. Grant of the Lone Star Gas Co. Photographs by Paul Cravens, photographer for Lone Star Gas Co.



14. With backward glances at a day's work well done, the men ride on empty pontoons to shore. Work of laying the underwater line will be resumed next day.

Houston Natural Gas Co. Sponsors Radio Program

A 15-MINUTE radio program, "Thru the Garden Gate," which is an institutional program with no merchandising commercial announcements, is being presented with the compliments of the Houston Natural Gas Co., Houston, Texas, over radio station KPRC, Houston.

This program, designed for stay-at-home gardeners dealing with the problems of the summer gardens, in the form of a garden open forum, is under the direction of Mrs. Ralph Conselyea, garden authority, and is on at 11 o'clock each Tuesday and Thursday morning.

Each Thursday, Mrs. Conselyea presents a guest speaker on the program, who is interviewed on a garden subject.

In conjunction with the program, Mrs. Conselyea is publishing a summer garden calendar each summer month. This bulletin is being distributed free through all Houston Natural Gas System district offices.

■ ■

Son of Late C. B. Babcock Is Auto Accident Victim

Charles E. Babcock of the C. B. Babcock Co., San Francisco, succumbed July 21 in San Francisco from injuries received in an automobile accident. He was 23 years of age.

Mr. Babcock had just returned from a three months' stay at the factory of the General Gas Light Co., Kalamazoo, Mich., a firm which the C. B. Babcock company represents on the Pacific Coast. Mr. Babcock was the son of the late Charles B. Babcock, founder of the firm which bears his name and a leader nationally known in the gas industry. Since his father's death last January, Mr. Babcock, together with his mother, Mrs. Bertha M. Babcock, had been managing the C. B. Babcock Co.

■ ■

A.G.A.E.M. Reports Gains In Gas Appliance Sales

C. W. Berghorn, managing director of the Association of Gas Appliance and Equipment Manufacturers, New York City, reported recently that gas appliance sales throughout the United States increased substantially during the first five months of this year as compared to sales figures for the same period of 1939.

The strongest rise was in the sale of gas-fired furnaces which registered an increase of 33.8% during the period of January through May in comparison with sales for the same period last year.

Gas range sales also rose 14.1% and water heater sales were up 13.6%.

■ ■

New Cities Service Line

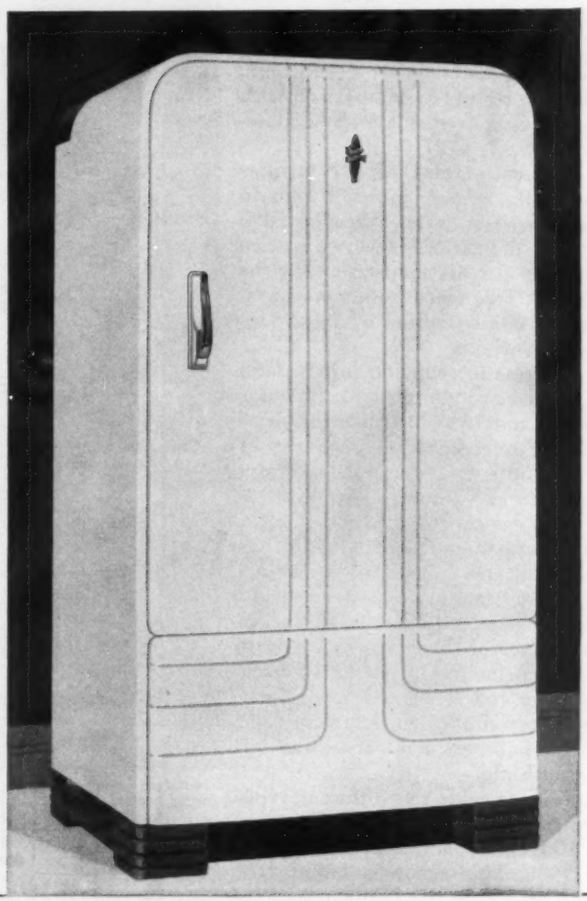
The Cities Service Gas Co., Bartlesville, Okla., has completed and put into service 2½ miles of new 16-in. pipe in Arkansas City. This is part of the regular line extending from Dilworth to Cambridge, Kans. Thirty-three bends were necessary in the 2½ miles of new line.

■ ■

Oklahoma Natural Asks Bids

The Oklahoma Natural Gas Co., Tulsa, Okla., has sent out specifications and asked for bids for the construction of 20 miles of 10-in. pipe line between Crescent and the company's main line near Edmond, Okla.

The mysterious disappearance of **FAMILY X!**



Now you see them...now you don't—unless you hold them with Gas Refrigeration

THE JONESES became non-existent as customers, as far as Inter-City Gas was concerned, when they'd decided that as long as they were replacing their old electric refrigerator with a new one, they might as well go the whole hog and make theirs an all-electric kitchen.

That's where Salesman Jim missed his chance to show them why only Gas Refrigeration, freezing with no moving parts, could really assure them of permanently silent operation at continued low operating cost.

Had he done so, the Joneses might now be well on the road toward having an all-gas home.

Not many utility executives are missing this point these days. They know the fact that more than a million people in the country are going to be replacing worn-out automatic refrigerators in the next twelve months is too good an opportunity to miss.

What's more, they realize that if they don't take advantage of it now, it may not recur for many years!

The **SERVEL** **ELECTROLUX** *Gas Refrigerator*

GAS REFRIGERATION—

- ★ PROTECTS YOUR PRESENT GAS LOAD
- ★ INCREASES LOAD WITHOUT INCREASED INVESTMENT
- ★ STIMULATES THE SALE OF OTHER GAS APPLIANCES
- ★ PUBLICIZES THE MODERNITY OF GAS
- ★ PROMOTES THE USE OF "GAS FOR ALL FOUR JOBS"

WINS GOOD WILL FOR GAS AND GAS SERVICE

THE INDUSTRY'S 1939 SAFETY RECORD

THE National Safety Council, Inc., Chicago, Ill., has recently released, through Paul Jones, director of publicity, its annual statistical report on accidents in the public utilities industry. Some of the outstanding facts about 1939 are:

1. All types of public utilities averaged 11.55 for frequency* and 1.57 for severity† during 1939. While the frequency rate was slightly below the average of 11.83 for all industries, the severity rate was higher than the general average of 1.42.

2. Large utilities had better records than did small companies, averaging 10.54 for frequency and 1.44 for severity, but small companies, on the whole, had the best results in comparison with 1938, reducing frequency 4% and severity 18%.

3. Frequency rates of all utilities averaged 3% higher in 1939 than in 1938, but severity rates averaged 20% lower. The reduction in severity is twice the average for all industries, but the increase in frequency compares unfavorably with a reduction of 5% by industry as a whole.

4. Progress in reducing injury rates since 1926 has amounted to 78% for frequency and 72% for severity. These reductions exceed average decreases of 69% and 50% in corresponding rates for industry as a whole.

5. Only gas and electric and straight electric companies made reductions in both injury rates from 1938 to 1939.

6. The outstanding experience in 13 years has been the large reduction in the frequency of fatalities, 71%.

7. The principal mechanical cause of fatalities and permanent partial disabilities was improper guarding and the principal personal cause was improper attitude.

Experience with the different types of injuries shows that only temporary total disabilities increased in frequency from 1938. This accounts largely for the rise of 3% in the frequency of injuries of all types. All types of injuries decreased in severity, drops of 36% in frequency and 56% in the severity of permanent partial disabilities were the largest for any type of injury. Fatalities decreased 16% in frequency which accounts principally for the decrease of 20% in the general severity rate.

During the last six years the circumstances and causes of accidents resulting in 564 fatalities and permanent partial disabilities have been reported. The outstanding agency of injury in serious injuries was electrical apparatus. Second, were injuries resulting from falling, sliding, and flying objects and usually occurred when employes were handling tools and equipment by hand or by hoists. Third, was falls from one level to another.

During 1939 the 309 unsafe injuries were due to:

1. Unsafe positions, standing under suspended loads, riding on trucks in an unsafe position.
2. Failure to use protective equipment.
3. Working on equipment that was electrically charged, and working on machinery in motion.
4. Unsafe use of tools and equipment.
5. Removing, mis-adjusting or otherwise making safety devices and equipment inoperative.
6. Failure to tag, lock, or block vehicles, switches and similar equipment against motion or flow of current.
7. Gripping, holding, lifting, or otherwise handling materials and equipment unsafely.

The best all-time no-injury record in the natural gas field was made by the Hope Natural Gas and Subsidiary Companies, Pittsburgh, Pa., with 3,167,788 man-hours without a disabling injury. Record started November 10, 1931, and terminated September 23, 1932. In the gas and electric field, The Twin State Gas and Electric Co., Boston, Mass., recorded 1,884,600 man-hours between September 16, 1931, and October 29, 1932. In the manufactured gas industry, the Philadelphia Electric Co., gas division, holds the record of 1,709,700 man-hours for the period of November 24, 1932, to September 22, 1933.

On the honor roll for 1939 in the natural gas field are:

1. The Lone Star Gas Co., the Dallas Gas Co., and County Gas Co., a subsidiary, all of Dallas, Texas. These had the lowest 1939 frequency rate among large organizations—0.88.

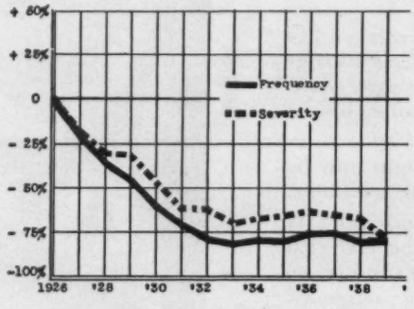


FIG. 1. Percentage changes in accident rates for all public utilities.

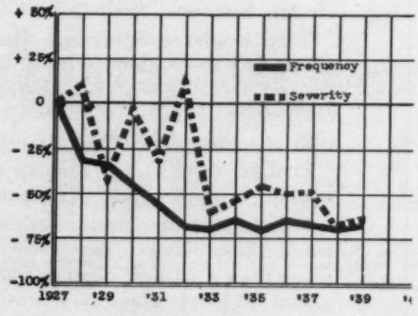


FIG. 2. Percentage changes in accident rates for manufactured gas companies.

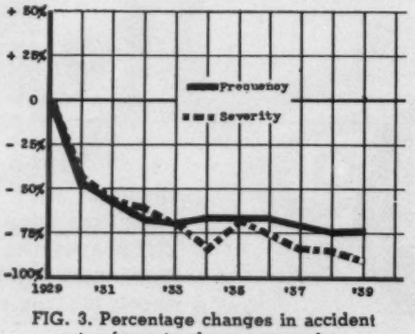


FIG. 3. Percentage changes in accident rates for natural gas companies.

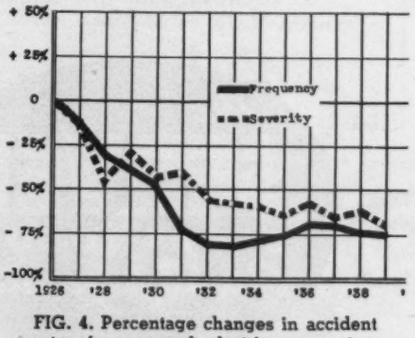


FIG. 4. Percentage changes in accident rates for gas and electric companies.

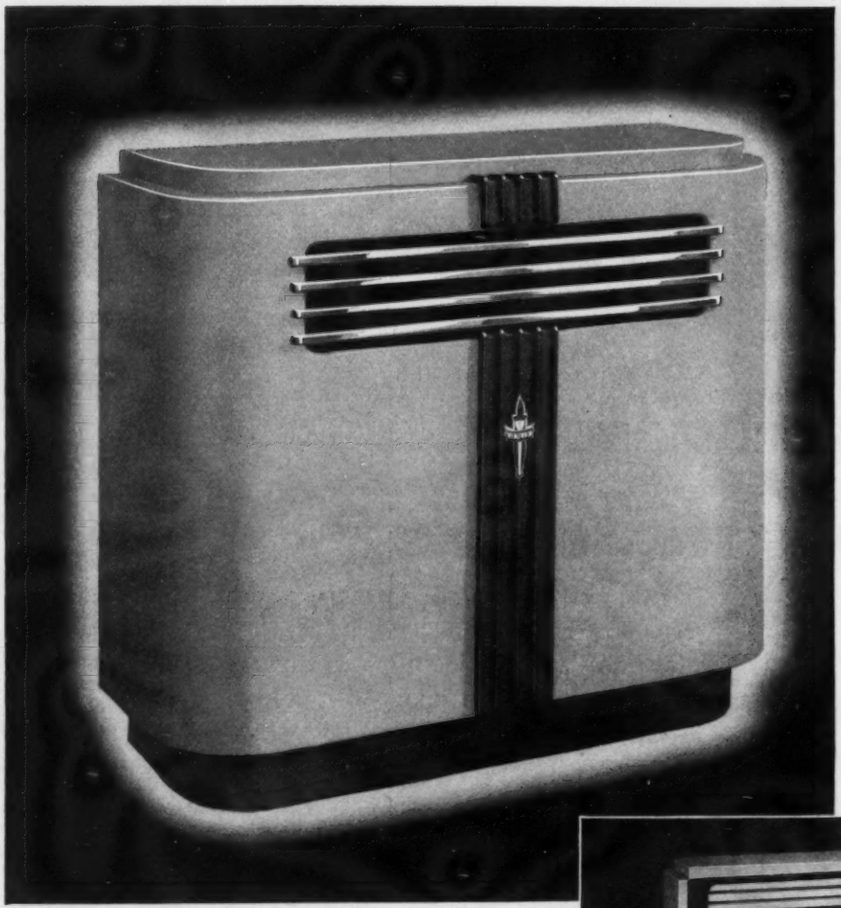
To determine the change in the accident experience of an industry from one year to another the same companies should be included each year. Otherwise what appears to be a drop in rates may result entirely or partially from the presence in the second year only of companies with lower-than-average rates; or vice versa. In determining changes in rates over a series of years, therefore, identical companies are used in each two-year comparison.

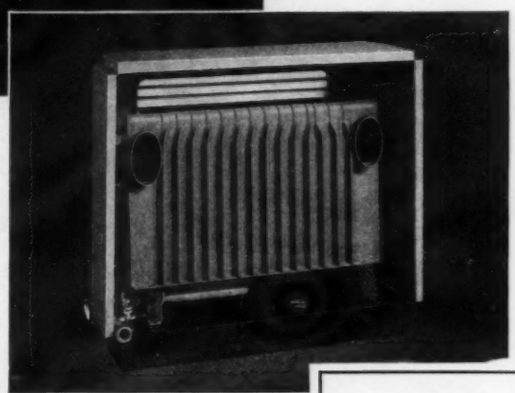
*Injury frequency rate—is the number of reportable injuries per 1,000,000 man-hours of exposure.

†Injury severity rate—is the number of days lost as the result of reportable injuries, per 1000 man-hours of exposure. This rate includes arbitrary charges for permanent disabilities and deaths, in accordance with the standard scale.

WEDGEWOOD'S *Gas Circulating* HEATERS

The Masterpiece of Modern STYLING and *Lifetime* CONSTRUCTION





Wedgewood Console Gas Circulating Heaters are true masterpieces of styling, beauty, and construction. Built in three popular and convenient sizes with three lovely color combinations—a soft morocco finish on warm sandtone and seal brown—and a new hammertone finish that gives the appearance of delicately hammered copper.

Sturdy LIFETIME construction, featuring double insulation, automatic lighter, down-draft diverter, no flame-to-metal contact, insures scientifically correct heating. No fuel waste! No fires to kindle. Just clean, healthful, comfortable warmth.

EFFICIENT ONE-PIECE UNIT

Formed from one piece of steel, the entire heating unit provides greater uniform conductivity; more square feet of heating surface — more heat from less gas.

Gas THE MODERN FUEL

WEDGEWOOD

THE MODERN ARISTOCRAT OF GAS CIRCULATING HEATERS

JAMES GRAHAM MANUFACTURING CO. • Los Angeles - San Francisco - Newark, Calif. — Portland, Ore.

2. The Columbia Gas and Electric Corp., Wilmington, Del. The Columbus group had the lowest 1939 severity rate among large units—0.01.

3. Amarillo Gas Co. and Associated Companies, Amarillo, Texas, had the largest reduction in frequency from 1937 to 1939 among large units—75%; also the largest decrease in severity—99%.

Mentioned for the 1939 honor roll in the gas and electric fields were:

1. The Virginia Electric and Power Co., Norfolk, with the best 1939 record among large companies—1.27 for frequency and 0.02 for severity.

2. Montreal Light, Heat and Power Consolidated, Quebec, Canada, largest reduction in frequency from 1937 to 1939 among large organizations—48%; also the largest decrease in severity—84%.

3. Northwestern Public Service Co., best 1939 record among middle-sized companies—1.41 for frequency and 0.02 for severity.

4. Lawrence Gas and Electric Co., Lawrence, Mass., largest reduction in frequency from 1937 to 1939 among middle-sized organizations—53%, also the largest improvement in severity—82%.

5. Fitchburg Gas and Electric Co., Fitchburg, Mass., worked more hours without a disabling injury than any other small company with a perfect 1939 record — 368,000 — and reduced both injury rates 100% from 1937.

A.G.A. Nominating Committee Announces Report for October Convention

WHEN president of the American Gas Association, Walter C. Beckjord, vice president and general manager, Columbia Gas & Electric Corp., calls to order the annual convention of the A.G.A. at Atlantic City, N. J., October 7, 1940, the following report of the general nominating committee will be presented:

For president: T. J. Strickler, vice president and general manager, Kansas City Gas Co., Kansas City, Mo.

For first vice president: George F. Mitchell, president, the People's Gas Light & Coke Co., Chicago, Ill.

For second vice president: George S. Hawley, president, the Bridgeport Gas Light Co., Bridgeport, Conn.

For treasurer: Ernest R. Acker, president, Central Hudson Gas & Electric Corp., Poughkeepsie, N. Y.

For directors (two-year terms): John W. Batten, vice president, Michigan Consolidated Gas Co., Detroit, Mich.; A. F. Bridge, vice president and general manager, the Southern Counties Gas Co., Los Angeles, Calif.; James A. Brown, engineer in charge of gas operations, the Commonwealth & Southern Corp., New York, N. Y.; D. W. Harris, vice president and general manager, Arkansas Natural Gas Corp., Shreveport, La.; Conrad N. Lauer, president, the Philadelphia Gas Works Co., Philadelphia, Pa.; H. N. Mallon, president, Dresser Manufacturing Co., Bradford, Pa.; F. H. Payne, president, American Meter Co., Erie, Pa.; Herman Russell, president, Rochester Gas & Electric Corp., Rochester, New York, N. Y.; N. T. Sellman, assistant vice president, Consolidated Edison Co., of New York, N. Y.; Marcy L. Sperry, president, Washington Gas Light Co., of Washington, D. C.; and P. S. Young, chairman of the executive committee, Public Service Electric & Gas Co., Newark, N. J.

The general nominating committee for the above are: R. L. Fletcher, chairman; A. M. Ambrose, H. C. Blackwell, F. M. Banks, E. P. Prezzano, and Earl W. Roberts.

The following have been nominated by section nominating committees to serve as section officers for the next association year:

Accounting Section: For chairman, E. N. Keller, Philadelphia Electric Co., Philadelphia, Pa.; for vice chairman, Lyman L. Dyer, Lone Star Gas Co., Dallas, Texas.

Commercial Section: For chairman, R. J. Rutherford, Worcester Gas Light Co., Worcester, Mass.; for vice chairman, E. J. Boyer, Minneapolis Gas Light Co., Minneapolis, Minn.

Industrial Gas Section: For chairman, H. Carl Wolf, Atlanta Gas Light Co., Atlanta, Ga.; for vice chairman, George F. B. Owens, the Brooklyn Union Gas Co., Brooklyn, N. Y.

Manufacturers Section: For chairman, Watson E. Derwent, George D. Roper Corp., of Rockford, Ill.

Natural Gas Section: For chairman, Harry D. Hancock, Gas Advisers, Inc., New York, N. Y.; for vice chairman, J. French Robinson, the Peoples Natural Gas Co., Pittsburgh, Pa.

Publicity and Advertising: For chairman, Charles A. Tattersall, Niagara-Hudson Power Corp., New York, N. Y.

Technical Section: For chairman, D. P. Hartson, Equitable Gas Co., Pittsburgh, Pa.; for vice chairman, Harold L. Gaidry, New Orleans Public Service, Inc., New Orleans.

■ ■

Coldwater, Ohio, Gas Plant Sold To Partnership

The gas plant at Coldwater, Ohio, has been sold to the partnership of William R. Foss, John Weigel and Arnold Shock by the Marion Reserve Power Co. The Ohio Utilities Commission authorized the sale on the condition that the partnership make a $2500 deposit to insure rehabilitation of the plant.

Consolidated Edison Tries To Reduce Bill Complaints

IN an effort to reduce to an absolute minimum any misunderstanding, on the part of customers, of the monthly gas and electric bills, the commercial relations department of the Consolidated Edison Co. of New York, Inc., and system companies has issued about 300,000 copies of a booklet called "The Story Behind Your Electric and Gas Bill," which will be distributed by service clerks in the district offices.

The records of the commercial department show that most of the complaints from customers are concerned with bills which they consider to be too high and that most of these complaints, according to the record, turn out to be based on a lack of understanding of what causes variation in consumption from month to month and the customer's inability to check his own meter readings and bills before making a complaint.

A two-page "spread" shows a representative customer's bill with a full description of every item which appears on it — from the telephone number to call to make inquiries, to an explanation of the city sales tax.

The text under each heading is written in simple language and is short and to the point. The book is illustrated throughout. Service clerks have been instructed to give a copy of the booklet to every complainant.

■ ■

Night Course Available Next Month For Gas Men

A COURSE consisting of 28 lectures, 22 laboratory sessions, five inspection trips, four lecture discussions and three quizzes, beginning September 26 and ending May 8, 1941, will be given by the Brooklyn Polytechnic Institute, Brooklyn, N. Y. The class now being formed will be the fourteenth and a comprehensive study of fundamental principles of physics, distribution systems, combustion processes, consideration of economics of fuel utilization in general, and general topics will be given.

The course is intended primarily for men employed in the manufactured gas and allied industries and is designed to give students a broad picture of the industry in its entirety rather than an intensive analysis of any one branch.

■ ■

H. G. Ridgway, P. G. and E. Division Manager, Passes

Harry Garfield Ridgway, northern division manager for the Pacific Gas & Electric Co., San Francisco, Calif., passed away June 23 in Ross, Calif.

Mr. Ridgway was 59 years old at the time of his passing, and lived in San Rafael, where he had charge of the company's division embracing Marin, Lake, Sonoma, Mendocino, and Napa Counties. He had been with the company since 1910.

Clifford Bartlett, formerly assistant division manager at San Rafael, has been appointed as division manager.

■ ■

S.C.M.A. Holds Meeting

The monthly meeting of the Southern California Meter association was held July 25 in Huntington Park, Calif. D. A. Stocks, Richfield Oil Corp., spoke on "Control Instruments," and T. G. McAlister, gasoline division, The Texas Co., lead the discussion. Two related industrial motion pictures, "From Mine to Metal" and "Fabricatory Processes," were also shown.

Old Stove Round-Up

SALE OF Roper Gas Ranges

A SMASHING SUMMER AND FALL PROMOTION NOW READY! A PROVEN WINNER FOR STIMULATING SALES!

For the past 11 years, the Roper OLD STOVE ROUND-UP Sales plan has corralled extra dollars of profit for Roper outlets. It's ready again, to help you round-up greater sales volume, greater profits.

It's more complete, has more new ideas, is surrounded with more glamour. It incorporates the proven sales appeals of the past, plus new strategies designed to lasso more customers.

"SAVE THE VITAMINS" Featured

Appetite appeal is prominent throughout every phase of the campaign. Coupled with the bargain opportunity stressed in the OLD STOVE ROUND-UP, it provides tremendous punch.

Here's a plum ripe for the picking. Find out about it. You'll get quick action. Write or wire at once!

ROPE 'EM IN WITH THESE Sales Helps

- POST CARDS
- PENNANTS
- BROADSIDES
- ENVELOPE INSERTS
- NEWSPAPER AD MATS
- WINDOW DISPLAY SUGGESTIONS AND MATERIAL

... and many other items for a complete, well rounded campaign.

GEO. D. ROPER CORPORATION

GENERAL SALES OFFICE AND PLANT: ROCKFORD, ILLINOIS

Chicago: 343 So. Dearborn Street; Atlanta: 901 William Oliver Building; Los Angeles: 2481 Porter Street; Philadelphia: 401 N. Broad Street; Newark: 110 Edison Street; Dallas: Santa Fe Bldg., Second Unit; Cincinnati: 626 Broadway; Oakland: 500 Kirkham Street; Cleveland: 2053 East 105th Street; Kansas City; Boston; Washington; Roanoke; Pittsburgh; New York; Denver.

ROPER GAS RANGES ARE IDEAL FOR USE WITH ANY TYPE OF GAS, INCLUDING BOTTLED GAS

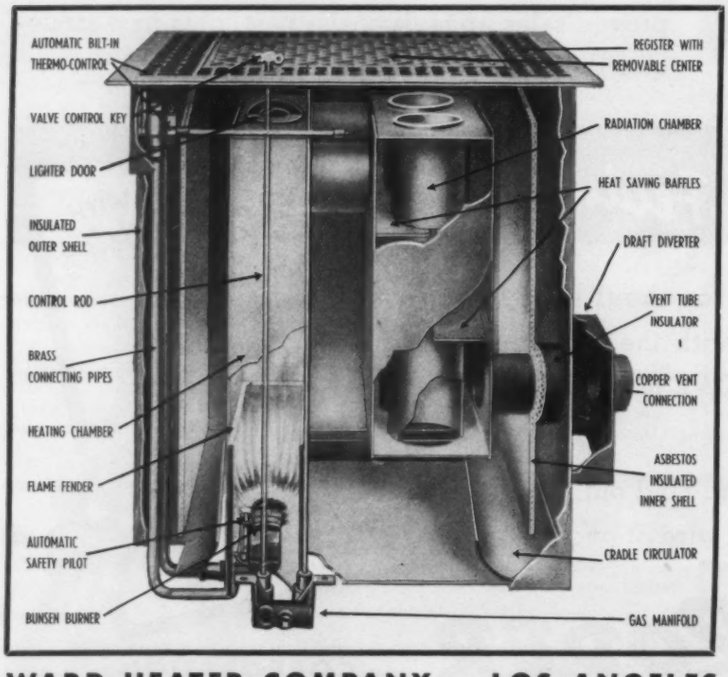
Maybe It's "Blessed Innocence..."

THAT KEEPS SOME COMMERCIAL MANAGERS FROM *GETTING IN ON THE GROUND FLOOR* WITH WARD FLOOR FURNACES...

There's a saying that "what you don't know won't hurt you." But when the *unadorned facts* prove that so many utilities give floor furnaces a major place in their merchandising programs... and enjoy *profits* and *space heating load* your company is missing... maybe it's folly not to get wise to WARDS.

Risk exposure to a little *naked truth,* and you'll find out that floor furnaces offer the most practical means of putting space heating with gas into thousands of existing homes... homes where there are no basements, where first cost is important, or where installation difficulties can easily be solved with WARDS.

You need WARDS... whether you feature them exclusively or already carry some other line. There's a big demand for a floor furnace with *completely built-in automatic features*... like our *Cradle Circulator, Automatic Pilot* and *Bilt-in Thermo Control* (a built-in thermostat that really works!). The WARD Floor Furnace is a complete package... everything self-contained. No external accessories. Installation as easy as *"taking candy away from a baby."* Sales are pretty sweet, too!



ASK FOR OUR LATEST CATALOG

For 31 years WARD FLOOR FURNACES have grown in importance in the merchandising programs of many utilities. Today we make floor furnaces *exclusively*... 62 models adaptable to a wide variety of heating requirements. WARD FLOOR FURNACES are *ten-year-guaranteed* appliances with a proven record of service. They will please your customers... and profit your company.

Get in on the Ground Floor with

WARD

Floor Furnaces

WARD HEATER COMPANY... LOS ANGELES

FACTORY REPRESENTATIVES

A. S. KINCAID, *Southern Manager,* P.O. Box 5, Dallas, Texas... J. H. STUBBINS, 300 East 68th Terrace, Kansas City, Missouri... H. C. SANDERSON, 207 Fulton Building, Pittsburgh, Pennsylvania... L. E. KIRKPATRICK, 1700 15th Street, Denver, Colorado... LEON M. TAYLOR, 3200 Main Street, Dallas, Texas

YOUR LOAD IS AS GOOD AS THE APPLIANCE YOU SELL

The Liquefied Petroleum Gas Market

EXPANDS ONE THIRD IN 1939

THE trend in sales of liquefied petroleum gases, which had showed some slackening in 1938, again turned sharply upward in 1939. Domestic sales of 223,580,000 gals. of liquefied petroleum gases in 1939 were reported in a survey made by the Bureau of Mines, United States Department of the Interior. The improved demand for liquefied petroleum gases in 1939 is indicated by the 35% gain over the 1938 total of 165,201,000 gals., which in turn was 17% above domestic requirements in 1937. The expansion in the market of 1939 measures up to gains of 33% and 39%, respectively, in 1937 and 1936.

All important uses of these gases showed marked advances in 1939 over 1938, with the exception of chemical manufacturing. Sales of "bottled gas" for use in rural districts beyond the city gas mains, rose over 50% in 1939. Gas companies, which use liquefied petroleum gases for enriching manufactured gas or for direct distribution through their mains, increased their purchases of these gases by nearly 37% in 1939.

Industrial demand, which declined in 1938 as compared with 1937, made an outstanding gain of 59% in 1939, as manufacturing activities again advanced. The spread in their use as motor fuel, especially in western areas, is evidenced by a 37% increase in deliveries for this purpose in 1939. Liquefied petroleum gases required for chemical manufacturing was reported as 20% below the 1938 total.

Exports of liquefied petroleum gases, which have fallen steadily since 1936, again turned upward in 1939 and the total of 1,570,000 gals. is approximately double the quantity in 1938. Distributors supplied a domestic and export demand of 225,150,000 gals. in 1939, a 36% gain over the 1938 total of 166,026,000 gals.

Except for the larger sales of the relatively unimportant pentane, sales of propane made the greatest proportionate gain in 1939, increasing by about 47%. Deliveries of butane were 35% above the 1938 total, while the demand for propane-butane mixtures was 23% above. Sales of pentane, a petroleum gas of chief importance to chemical manufacturers, increased greatly in 1939 to 3,886,000 gals., a 72% gain over the quantity in 1938.

Growth in the demand for "bottled gas" is revealed in the constantly increasing proportion of total liquefied-petroleum-gas sales which is required for this trade. In 1937 about 29% of the total deliveries of liquefied petroleum gases was reported for domestic consumption; this share increased to 35% in 1938 and to over 39% of all requirements in 1939. Gas companies absorbed about 7% of liquefied petroleum gas deliveries in 1938 and 1939 compared with 8% in 1937. The use of these gases as industrial fuel declined from 31% of the total demand in 1937 to 24% in 1938, but with greater manufacturing activities rose to 28% in 1939. About 20% of the sales were credited to chemical plants in 1937 and 1938; however, this share dropped to 12% in 1939, largely due to overstocking of this raw material by chemical manufacturers in 1938. Sales items for recent years show a slowly increasing proportion consumed as fuel for internal-combustion

TABLE NO. 1. MARKETED PRODUCTION OF LIQUEFIED PETROLEUM GASES BY USES, METHODS OF TRANSPORTATION, AND REGIONAL DISTRIBUTION, 1938-39*

(Thousands of Gallons)

	Propane	*Butane*	*Propane-butane mixtures*	*Pentane*	*Total 1939*	*Per cent 1939*	*Total 1938*	*Per cent 1938*
By uses:								
Domestic	52,553	17,881	16,093	1,023	87,530	39.2	57,832	35.0
Gas Manufacturing	2,083	9,796	3,483	73	15,435	6.9	11,307†	6.8
Industrial fuel	23,685	36,388	2,155	112	62,340	27.9	39,141†	23.7
Chemical manufacturing	249	42	23,957	2,644	26,892	12.0	32,299	19.6
Internal-combustion-engine fuel	663	5,850	23,279	....	29,792	13.3	21,701†	13.1
All other uses	110	1,394	53	34	1,591	0.7	2,921	1.8
Total	79,323	71,351	69,020	3,886	223,580	100.0	165,201	100.0
Per cent 1939	35.5	31.9	30.9	1.7	100.0			
Per cent 1938	32.8	31.9	33.9	1.4	100.0			
By methods of transportation:								
Bulk	36,218	69,453	61,695	3,447	170,813	76.4	128,061	77.5
Cylinders and drums	43,105	1,898	7,325	439	52,767	23.6	37,140	22.5
Total	79,323	71,351	69,020	3,886	223,580	100.0	165,201	100.0
Regional distribution:								
Pacific Coast area	7,891	12,916	27,690	....	48,497	21.7	35,138	21.3
All other areas	71,432	58,435	41,330	3,886	175,083	78.3	130,063	78.7
Total	79,323	71,351	69,020	3,886	223,580	100.0	165,201	100.0

*Figures for 1939 subject to revision. †Revised figures.

TABLE NO. 2. SALES OF LIQUEFIED PETROLEUM GASES, 1933-39
(Thousands of Gallons)

Year	Propane	Butane	Propane-butane mixtures	Pentane	Total
1933.....	15,835	19,056	3,226	814	38,931
1934.....	18,681	25,553	10,271	1,922	56,427
1935.....	26,814	34,084	13,492	2,465	76,855
1936.....	36,502	40,200	27,375	2,575	106,652
1937.....	46,474	45,399	46,694	2,833	141,400
1938.....	54,130	52,768	56,050	2,253	165,201
1939.....	79,323	71,351	69,020	3,886	223,580

engines, a use that has increased from 12% of total deliveries in 1937 to over 13% in both 1938 and 1939.

The American Gas Association is the source of the following statistics covering the distribution of liquefied petroleum gases by manufactured gas companies:

> "At the end of 1939, liquefied petroleum gas was being delivered through mains to consumers in 178 communities in 30 states by 82 companies supplying 49,800 customers.
>
> "Butane-air gas with heating value ranging from 520 to 1,000 B.t.u. per cu. ft. was supplied to 125 communities in 30 states by 72 companies. A mixture of undiluted butane and propane gas with a heating value of 2800 to 3000 B.t.u. per cu. ft. was supplied to 12 communities in California by five companies. Undiluted propane gas with a heating value of 2550 B.t.u. per cu. ft. was supplied to 41 communities in Maryland, Minnesota, New Jersey, Virginia, North Dakota and Wisconsin by six companies."

The rapidly expanding household demand for liquefied petroleum gases is again indicated in the mounting percentage of shipments in cylinders and drums, compared to corresponding losses in the share of bulk distribution. Gases handled in cylinders comprised 23.6% of the marketed production 1939 compared to 22.5% in 1938 and 21.2% in 1937. It is noted from a second angle that 96.5% of all shipments in cylinders during 1939 were reported for domestic use compared to 95.4% of the 1938 total so shipped.

A total of 50 distributors reported their sales of liquefied petroleum gases to the Bureau of Mines in 1939 compared with 40 in 1938.

P.C.G.A. Plans September Convention; Hornby Nominated for Presidency

PLANS for the annual meeting of the Pacific Coast Gas Association at Del Coronado Hotel, San Diego, September 17-21, have been completed, according to Clifford Johnstone, manager of the association. The first four days will be devoted to business and technical sessions, with the annual banquet on Friday evening, September 20. On Saturday, September 21, will be held the annual golf and skeet tournaments, features of the convention.

Norman R. McKee, Southern Counties Gas Co., Los Angeles, chairman of the nominating committee, will submit the following report:

For president: Robert A. Hornby, vice president, Pacific Lighting Corp., San Francisco, Calif.

For vice president: W. G. Vincent, vice president and executive engineer, Pacific Gas & Electric Co., San Francisco, Calif.

For treasurer: D. G. Martin, general auditor, Pacific Gas & Electric Co., San Francisco.

For directors: W. R. Smith, vice president, Continental Water Heater Co., Los Angeles, Calif.; R. G. Barnett, vice president and general manager, Portland Gas & Coke Co., Portland, Ore.; H. W. Edmund, sales manager, Coast Counties Gas & Electric Co., Santa Cruz, Calif.; and W. C. Mainwaring, sales manager, British Columbia Electric Railway Co., Vancouver, B. C.

Present directors who will continue for another year are: F. M. Banks, vice president, Southern California Gas Co., Los Angeles, Calif.; R. S. Fuller, gas engineer, Pacific Gas & Electric Co., San Francisco, Calif.; M. A. Pooler, vice president and general manager, Tucson Gas, Electric Light & Power Co., Tucson, Ariz.; C. H. Potter, general commercial manager, Southern Counties Gas Co., Los Angeles, Calif.

A. E. Holloway, retiring president, automatically becomes a member of next year's board of directors.

The following committee appointments have been made for the convention: General chairman, D. H. Perkins; banquet, Ray C. Cavell; entertainment, Charles Davies; hotel, Alfred May; information, R. J. Phillips; properties, William de Waard; publicity, F. M. Raymond; registration, H. G. Dillin; transportation, C. D. Weiss; all of the San Diego Consolidated Gas & Electric Co., San Diego, Calif.; golf, J. J. Delaney, Reliance Regulator Corp., Alhambra, Calif.; and for skeet, E. M. de Remer, Southern California Gas Co., Los Angeles, Calif.

■ ■

Gas Utility Revenues Gain In May, A.G.A. Reports

Manufactured and natural gas utility revenues amounted to $68,371,300 in May, 1940, as compared with $64,926,900 for the corresponding month of 1939, an increase of 5.3%, it was announced today by Paul Ryan, Chief Statistician of the American Gas Association.

The manufactured gas industry reported revenues of $31,649,700 for the month, an increase of 3.7% from the same month of the preceding year. The natural gas utilities reported revenues of $36,721,600, or 6.7% more than for May, 1939.

Total sales of manufactured gas for the month were 32,074,600,000 cu. ft., an increase of 7.3%. Natural gas utility sales for the month amounted to 108,434,200,000 cu. ft., an increase of 5.7%.

Manufactured gas sales for domestic uses, such as cooking, water heating, refrigeration, etc., were 0.8% more than for May, 1939. Sales for commercial uses gained 6.3% and industrial uses increased 12.5%.

Natural gas sales for domestic purposes showed an increase of 10.8% for the month, while industrial sales gained 6.9%.

■ ■

Omaha, Neb., To Increase Gas 50 B.t.u.'s Soon

Omaha, Neb., recently voted to increase the B.t.u. of the gas from 550 to 600 B.t.u. by increasing the volume of natural gas approximately 10%. Negotiations on the new contract are being made with the Northern Natural Gas Co., Omaha, Neb., who serves the city. Heretofore the proportion of natural gas has been about 40%.

The action was taken on recommendations by Charles Bellamy, of the Columbia Engineering Corp., New York, N. Y. C. D. Robison is operating engineer for Omaha's Metropolitan Utilities District.

■ ■

Minneapolis Gas Light Co. Gives Lower Gas Rates

Following a new franchise and rate ordinance recently granted, which allowed the Minneapolis Gas Light Co., of Minneapolis, Minn., to sell straight natural gas for industrial use and provided for changing over from mixed gas to natural gas for domestic purposes, the company announced that new gas rates went into effect August 1.

The domestic gas reduction is the fifth in less than three years and, under terms of the new gas franchise, domestic rates are subject to adjustment every six months.

New York Gas Men Hold One-Day Meeting

THE gas operating group of the Empire State Gas and Electric Association held a one-day meeting recently in New York. The morning was devoted to formal presentation of papers and the afternoon to discussion.

Chairman F. F. Ingwall, Binghamton Gas Works, New York, N. Y., opened the sessions and introduced the first speaker, Henry A. Doering, vice president, Westchester Lighting Co., Mount Vernon, N. Y., who presented a paper prepared by E. P. Prezzano, president of the same company and president of the association. The paper emphasized the growing effect and value of the house heating load.

In the absence of Frank Katlien ,Westchester Lighting Co., his paper on "Safety developments in governor manhole construction" was presented by J. J. Boyan of the same company. Other speeches were given by J. W. McNary, Consolidated Edison Co., New York, N. Y., and David Steen, Queens Borough Gas and Electric Co., Far Rockaway, N. Y.

■ ■

Leak Tester Invented By Dallas, Texas, Gas Man

A device, invented by Paul E. Nicholls, Galveston manager for Texas Cities Gas Co., Dallas, Texas, is reported to be so sensitive that it will detect leakage of gas through an opening no larger than the size of a pinhead — or even a leak that will not cause movement of the check hand on a meter.

Based on the fact that only a small amount of gas, under low pressure, is necessary to cause bubbles through water, the device is a small glass bottle with inlet and outlet. All outlets in the house system are closed and the gas turned into the line; if there is the tiniest leak in the system, bubbles will show up in the water contained in the testing device.

■ ■

Ohio Fuel Gas Co. Gets Franchise For Sylvania

The Ohio Fuel Gas Co., Columbus, Ohio, has started construction work on a gas line to serve Sylvania, Ohio, following the granting of a franchise by that city. Company officials said they will spend about $75,000 on the improvement, including feeder lines within the city.

The company also announced that Ottawa Hills Village has approved a renewal of the gas contract for that town, granting a franchise for 10 years. Ottawa will be supplied with natural gas and Sylvania shall have natural, mixed or manufactured gas.

■ ■

Citizens Gas & Coke Utility Shows Gains

The Citizens Gas & Coke Utility, Indianapolis, Ind., announces total gas consumption for the first six months of 1940 reached 200,294,000,000 cu. ft., an increase of more than 332,000,000 cu. ft. over the same six months of 1939. Gains in gas consumption were registered in every bracket.

■ ■

Michigan Firm Incorporates

The Major Gas Co., Inc., Grand Rapids, Mich., has filed articles of incorporation. Incorporators are Jeanne Kowalske and W. E. and Fred Reefer. The firm has an authorized capital stock of 1000 shares of common stock with par value of $10 each.

The finalists in the employe speaking contest sponsored recently by the Republic Light, Heat & Power Co. of New York, and the Dominion Natural Gas Co. of Canada. Standing (left to right): C. Judd, G. Bauslaugh, C. Radebaugh, R. Pendleton, F. Strebe, R. Page. Seated (left to right): J. C. Elliott, R. Miller (Honorable Mention), H. Schrader, R. Read (First Prize), W. Elliott.

Republic Light, Heat and Power Co. Holds Employe Public Speaking Contest

"HOW I Can Do a Better Customer Relations Job," — that was the topic under consideration at the final eliminations of an employe speaking contest recently sponsored by the Republic Light, Heat & Power Co. of New York and the Dominion Natural Gas Co. of Canada. Over 120 employes representing all phases of gas company operations took part in the divisional elimination contests.

Robert L. Read, bookkeeper from the Niagara Falls, N. Y., office carried off first honors over nine other contestants at the final contest on June 14 in Buffalo. Robert I. Miller, office boy of the Buffalo office, was given the honorable mention award.

S. B. Severson, vice president and general manager of the companies, and sponsor of the contest, acted as chairman for the meeting. Mr. Severson stated that the large participation by so many employes in diversified jobs clearly indicated the interest the employe has in improving customer relations. He recommended the contest as a means of offering the employe an opportunity to speak before a group, to express his thoughts on his job, its relations to company operations and personnel, and to gain a better understanding of how these factors can be used by him in promoting better customer relations. The contest serves a purpose also in uncovering hidden talent in the form of employes with speaking personalities.

Judges for the contest were Dr. Lewis Froman, Dean of Millard Filmore College, University of Buffalo; Jacob D. von Maur, Manufactured Gas Section, Canadian Gas Association; and Norman D. Plummer of the New York Telephone Co.

Both utility sponsors of the contest are subsidiaries of Cities Service Co., N. Y. The Republic Co. serves natural and manufactured gas to 45,000 customers in Western New York, while the Dominion company serves natural gas to 45,000 consumers in Southern Ontario, Canada.

■ ■

More Stock To Be Issued By Missouri Gas Co.

The Securities and Exchange Commission has authorized the sale of 11,000 new shares of common stock at $100 per share by the St. Louis County Gas Co., Webster Groves, Mo., the stock to be purchased by the parent company, the North American Co., New York, N. Y.

It is stated the $1,100,000 will be used to bolster the financial position of the utility, improve service to the public, liquidate loans due and to construct a new gas reservoir at a cost of $407,000.

■ ■

Kokomo Gas & Fuel Co. Sold

Samuel D. Whiteman, Ralph Beaton, and C. J. Kurtz, directors of a newly-formed group of Kokomo, Ind., and Columbus, Ohio, investors has taken over the Kokomo Gas and Fuel Co., from The Peoples Gas Subsidiary Corp., of Illinois and the Indiana Natural Gas and Oil Co.

SALES Slants

By PRESTON BOROM

That Family Dollar Is Just So Round

RECENTLY, we heard a gas appliance salesman complaining of the seriousness of his competition—others in his line of business. Did he consider that his only competition? Yes, like many salesmen whose eye goes only to the visible horizon!

But another type of competition existed for him and although no more serious, perhaps, than the one he knew of, it was nonetheless to be considered.

It is not only unseen but a subtle type of competition and the salesman must be on the job early and late to beat it.

As an illustration, it is not the neat, trim secretary or vivacious blond, as the gossip-mongers would prefer to believe, who gives the wife competition for her husband's time. Rather, it is a set of golf clubs in preference to an afternoon at home; a brief case of work from the office instead of an evening at the movies; a stag party with old friends that will keep the husband out until a late hour. And it is many other similar diversions with which the wife must compete for a share of her husband's time. Too, she knows that an evening he spends over work or in other ways is an evening of his time lost to her forever.

In like manner, it is the furniture merchant, the automobile dealer, the bond salesman and a number of others who are out for the family dollar just as is the refrigerator salesman. If they win, he loses — the family dollar is only so big and will go only so far.

This "unseen competition" is a serious matter in our business. Never doubt it! As an example, Mrs. Housewife can just as easily as not get along another six months or a year with her old gas stove — she can sacrifice this need, and a great one if she only realized it, to other purchases, less pressing, perhaps, if the truth were known.

One good solution is to apply the "early and late" practice. Keep after your prospects during every working minute of your day.

Ho Hum!—Can't Mix Sales with Summer

"THAT summer is a bad season for business is easily one of the most common of notions," said a gas appliance salesman of our acquaintance. "However, before going any further, I want to go on record irrevocably as disclaiming any addiction to the notion.

"I hold to the school of thought that summer is no better or worse for business than we ourselves care to make it. When the midsummer sun bears down, the natural tendency is to take to the shade and remain there. If volume falls off, I try to be honest enough with myself to admit that the cool and shady spot which attracts and holds me is more apt to be the cause of any loss in the volume of my sales than an actual slackening of the business pace.

"But there's one good tonic to action — the best I have found so far. And that is the confident knowledge that the business is there; the thought that others may get it if I languish in the shade drives me onward.

"There's more money in the family budget available for gas appliance purchases during the summer season than at any other time. Why? The cost of living is lower — fresh foods are plentiful and cheap; light weight and less expensive wearing apparel reduces the clothing bill; and those extras the children need for school are no longer required. Orders are to be had — I may not know exactly where along main street but I overcome this by canvassing the street for its entire length.

"Yes! The summer season is a season of opportunity for the gas appliance salesman if he will only resist the temptation to languish in the shade. So again I say, summer is no better or worse for business than we ourselves care to make it."

Ask 'Em To Buy

"I'VE never been asked to buy," exclaimed a housewife once when asked why she had never replaced her ancient gas stove with a modern gas range. There are millions of people, literally millions, throughout the nation who are within that category.

Please note that the prospect did not say, "I've never been called on!" There is a vast difference in "calling on a housewife" and in "asking her to buy." Merely to call in and to tell of the wonders of a gas appliance are not always enough. It is a trait of the human mind to resist making decisions. Thus, urging one to the action you want by framing for one the decision that will produce is often necessary.

And one or even two such attempts to get an order is seldom enough. This fact is especially true of our selling problem. We are asking a person to buy a thing she needs, but she may not realize the need; or, realizing it, she may feel that the expenditure is not justified at this time. Thus, aside from the natural tendency to avoid making decisions, there is often real reason as the buyer herself sees it to resist, and sometimes stubbornly, your salesmanship.

Moreover, after the decision is made, unless you urge the housewife to immediate action, the same forces that caused her to hesitate in the beginning will become effective again and the job will have to be done all over at a later time.

All of which proves that gas appliance selling nor any other job of selling is no primrose path. But it is a profitable one and it becomes more and more pleasant as time helps you to master it.

■ ■

The Gas Industry's Desire

The gas industry does not desire to sell consumers more gas than they need, but it is important to sell consumers all the gas they really need and can benefit by using.

SALES CAMPAIGNS

Company: Brooklyn Union Gas Co., Brooklyn, New York.

Campaign Theme: Spring water heater drive.

Description: This 1940 drive set a new high in employe leads and delivered sales, according to Frederick G. Roberts, plan captain.

The Booster Club, comprising employes submitting one or more leads gained 901 members. Nine group leaders received leads from each employe in their group, thereby becoming members of the Best Sellers club.

In the district contest between Queens and Kings, based on a scoring arrangement, Queens proved to be the champions with a total of 1,008 points to the King's 855.

■ ■

Company: Hales-Mullaley, Inc., Oklahoma City, Oklahoma.

Campaign Title: George F. Jones, Jr., Contest.

Description: This refrigerator sales contest for cash prizes ran collaterally during June with the Gold Rush contest reported in the June issue of *GAS*, but was separate from it, according to H. E. Canup, sales manager. The contest was named after George F. Jones, Jr., vice president and general manager of Servel, Inc., Evansville, Ind., who formerly was a zone manager in Oklahoma.

Individual cash prizes are to be awarded at a victory dinner early in July to salesmen and proprietor dealers in each district who sold the largest number of Electrolux refrigerators. An additional $5 award is made for each double-door, 11 ft. refrigerator sold.

■ ■

Company: Laclede Gas Light Co., of St. Louis, Mo.

Campaign Theme: Smoke Elimination Campaign.

Description: Tying in with the signing of the smoke elimination bill by the mayor of St. Louis, the Laclede company started its gas house heating campaign by offering a 30-gal. automatic gas water heater, regularly priced at $81.50, free with every purchase of a gas conversion burner or a gas design furnace or boiler. If the purchaser had a water heater, he received a discount of $42.90 on his home heating installation.

In another 60-day water heating campaign, with the slogan "Stop Thief," leading salesmen were awarded prizes for the largest number of the furnace coil "thieves" removed with the sale of automatic gas water heaters.

■ ■

Company: Harrisburg Gas Co., Harrisburg, Pa.

Campaign Theme: The Battle of the Eskimos.

Description: This campaign, originated by Louis C. Smith, president, is a three months' refrigeration sales contest and includes the entire organization which is divided into two teams of evenly matched strength. Chiefs and councilmen of the teams are elected each month. Special monthly honors will also go to team members with the best sales records.

The contest was announced at a company banquet and enlisted are all employes, clerks, laborers, and accountants.

Company: B. C. Electric Railway Co., Vancouver, B. C.

Campaign Theme: President's Month Fishing Contest.

Description: In this contest, employes in each district turned in prospects that might have resulted in sales of gas appliances. Each district selected the name of a boat for the "fishing trip," and the number of prospects "hauled in" determined the speed of the ship as it raced over the course. Each boat's position was posted daily on a map in the lobby of the company's main office building.

Prizes were awarded to employes whose prospects resulted in sales within the month of the contest.

■ ■

Company: Greenwich Gas Co., Greenwich, Conn.

Description: The company will allow as credit on gas appliances the full amount of the gas bill paid by the customer in June. All previous gas bills must be paid in full. The offer is made to residential customers only and the credit applies only to customers living at premises to which gas has been supplied under bill rendered. The plan was devised by Eben F. Putnam, president of the company, and runs from June 1 to Aug. 15.

Quarterly Awards Given to A. G. A. Sales Winners

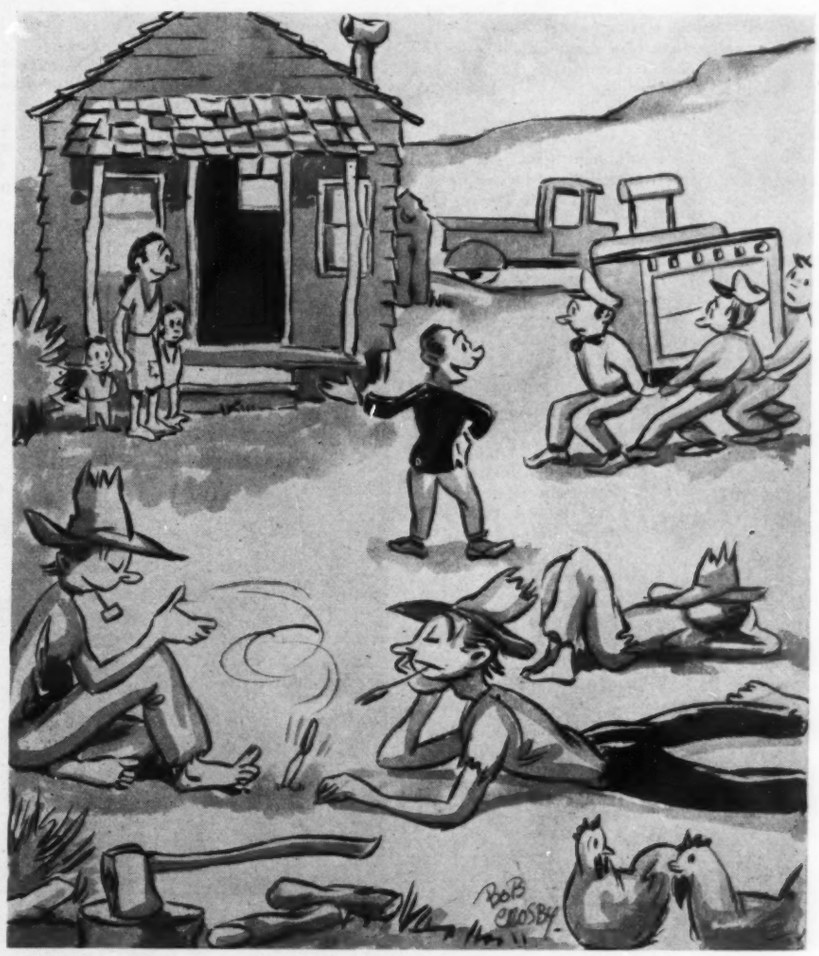
ANNOUNCEMENT of awards in the "Pioneers of Progress" campaign to winning gas companies, their top salesmen, and the six salesmen who are to receive Bermuda trips for sales work in the April, May and June quarter in the current nation-wide A.G.A. refrigeration committee sales drive was made recently by Bernard T. Franck, chairman of the committee and vice president of the Milwaukee Gas Light Co., Milwaukee, Wis.

Twenty-four companies have received an exact scale model of a Pan-American clipper ship and other cash prizes will be given to home service departments and top salesmen.

The six salesmen who have won flights to Bermuda are: Marianne Billies, Brooklyn Union Gas Co., Brooklyn, N. Y.; Ernest Audino, Providence Gas Co., Providence, R. I.; Albert Timmer, Muskegon Gas Co., Muskegon, Mich.; E. Hackathorn, East Ohio Gas Co., Akron, Ohio; W. B. Gilmer, Alabama Gas Co.; and R. W. Smith, Georgia Public Utilities Co., Griffin, Ga.

The contest opened in January and will close in October.

DOTTED LINE ROSCOE . . . . By Bob Crosby



"Maw's gotten so danged lazy she won't chop wood no more, so Paw got her a new gas range."

INDUSTRY *Personalities*

Justin R. Whiting, of St. Clair, Mich., and a member of the New York law firm of Weadock and Whiting, has been named to succeed **Wendell L. Willkie,** the GOP presidential nominee, as president of the Commonwealth and Southern Corp., following action taken at a board meeting at the company's headquarters in Wilmington, Del., where Whiting also was named to the board of directors. Mr. Willkie recently tendered his resignation as president and director of the corporation.

H. C. Smith was recently appointed appliance salesman for the Ohio Fuel Gas Co., Columbus, Ohio. His territory has eight towns.

D. B. Beecher has been named to the newly-created position of gas engineer for the gas companies serving Pittsburgh, Pa. Mr. Beecher is a graduate of both Ohio Wesleyan University and the Carnegie Institute of Technology and joined Gas Companies as field man in 1926. He has been studying the gas transmission requirements of the Pittsburgh & West Virginia Gas Co.

Charles G. Barndt has been appointed manager of the Sulphur district of the Community Natural Gas Co., Dallas, Texas. He succeeds **R. W. Harris,** who moved to Columbus, Ohio. **L. B. Denning, Jr.,** vice president and operating manager, said that Barndt's duties will be to supervise gas service in Sulphur, Davis, and Marietta.

Mr. Barndt is a native of Marion, Ohio, and received his A.B. degree from the University of Michigan in 1935.

Guy W. Faller, vice president and general manager of the Public Service Co., Denver, Colo., was named president of the firm to succeed the late **Henry L. Doherty**. The Colorado company, a subsidiary of the Cities Service Gas Co., has not had a president since 1906 when Mr. Doherty left Denver.

W. E. Durfey is a new member to the leisure class, as he retired from his duties as assistant treasurer of the Pacific Gas & Electric Co., San Francisco, Calif., recently. He has spent 37 years in the utility business and now plans to do a lot of things he never got around to do before.

H. D. Collier, San Francisco, was elected June 8 to succeed **W. H. Berg** as president of Standard Oil Co. of California. At the time of his election Mr. Collier was on a business trip to Japan, and was notified by cable.

Mr. Collier started with the Standard Oil Co. at Seattle in 1903 as a mechanical salesman, and, progressing from one position to a higher one, in 1924 was made a director of the company, and in 1931 he became vice president and later senior vice president. He was also a director of the American Petroleum Institute.

R. C. Merrick, Southern Counties Gas Co., Los Angeles, Calif., has been promoted to the position of district superintendent at Santa Barbara, Calif., according to **J. C. Gilbert**, district manager. Mr. Merrick has been with the company since 1926 and took up his new duties July 15.

Paul Temple, Minerva, Ohio, recently became manager of the Carrollton branch of the Natural Gas Co. of W. Va., Pittsburgh, Pa. He succeeds **A. K. Rader**, who retired after 34 years of continuous service.

Gussie O. Jones, advertising manager for the Atlanta Gas Light Co., Atlanta, Ga., has been awarded honorable mention by the Josephine Snapp Award Committee of the Women's Advertising Club, Chicago, Ill., for outstanding advertising. She has been associated with the Atlanta Gas Light Co. for 10 years.

Frederick W. Jesser, secretary, Consolidated Edison Co. of New York, Inc., N. Y., retired recently with more than 51 years of service to his credit. **Melville T. Chandler**, assistant secretary and manager of the general office service department, was elected to succeed him. Mr. Chandler was hired as an office boy by the United Electric Light & Power Co., one of the predecessors of Consolidated Edison Co., in 1915.

George S. Jones, Jr., Servel, Inc., and Alan P. Tappan, of Tappan Stove Co., played golf while attending the fifth annual convention of the A. G. A. E. M. at French Lick Springs, Ind., in May.

O. H. Moore, assistant superintendent of the compressor department, Lone Star Gas Co., Dallas, Texas, was awarded in June, a professional degree in mechanical engineering by Texas A. and M. College. Mr. Moore based his graduate thesis on the material which he and **B. L. Rogers,** superintendent of compressor department, Lone Star Gas Co., compiled for their paper presented at the A. G. A. Natural Gas Section convention in May. The thesis was titled, "Study of Precision Adjustment in Relation to the Care and Operation of Low Speed Four-Cycle Natural Gas Engines."

W. W. Downer on June 1 was appointed junior industrial engineer for the Lone Star Gas Co., Dallas, Texas, with headquarters in the Texas Cities Gas Co. office building at Waco, Texas.

Ray S. McDonald has been made a sales crew supervisor for the Gas Service Co., Kansas City, Mo., it was recently announced by **H. C. Porter,** new business manager. **Arthur E. Lineberry** was made assistant to **R. P. Lemmon**, Electrolux crew supervisor.

Irwin Rawson has recently joined **J. R. Ausnow.** of the Utilities Engineering and Construction Co., High Point, N. C.

Miss Jane Crampton, of Meridian, Miss., 17-year-old national winner of the recent Servel Urban Foods Project-Contest, has won not only a title — but a job.

Miss Crampton, who garnered the title of "America's Outstanding Homemaker of the Future" in competition with 8000 high school students from 40 states in the Union, has just been appointed junior home economist for the Peoples Water and Gas Co., of Meridian, Miss. The Urban Foods project covered food purchasing, preparation and preservation.

A. F. Hoehle, superintendent, division "G," and **E. E. Keeler,** superintendent of distribution operations, the Equitable Gas Co., Pittsburgh, Pa., recently presented 20-year service buttons to the following employes: **John P. Knell, A. G. Riggle,** 40 years service; **Henry Kind,** 35 years; **J. R. Madine,** 30 years; **William P. McKenna** and **B. J. Pauloski,** 20 years.

R. B. Beecher, former assistant to the valuation engineer of the Philadelphia Co., Pittsburgh, Pa., was recently appointed gas engineer for the gas companies serving the Pittsburgh area. The position is one which is newly created.

Mr. Beecher is a graduate of both Ohio Wesleyan University and Carnegie Institute of Technology, going to the company in 1926.

Lee Holtz, general superintendent of distribution, Southern California Gas Co., Los Angeles, Calif., was severely injured in a fall suffered while he was on vacation at Lake Tahoe, Calif., in July. It was understood he fell while walking, and broke his ankle in three places.

L. O. Howell, former Southern California Gas Co., Los Angeles, industrial gas sales engineer, who has been in the research department of the American Gas Association testing laboratories at Cleveland, Ohio, for the past three years, returned to his former position with Southern California Gas in Los Angeles, Calif., July 1. While in Cleveland, Howell completed research problems in connection with reducing atmospheres.

H. S. Boyle, sales promotion manager for Servel, Inc., Evansville, Ind., resigned June 1 after 11 years of service. He plans to re-enter the appliance field next fall.

Preview of coming campaigns by

P·G·and E·

PACIFIC GAS AND ELECTRIC COMPANY

GAS APPLIANCE SOCIETY OF NORTHERN CALIFORNIA

PEAK MONTH OF THE 1940 SUMMER GAS HEATING CAMPAIGN

Only one month to go! Promptly at closing time on August 31, the special 10% summer discount—and the special 1/3 allowance on dealer advertising—comes to an end. Make the most of these remaining weeks by stepping up the tempo of your advertising. See your local P. G. & E. office for free cuts and publicity photos to dress up your copy. Arrange with your local newspaper to have your copy and ours on the same page. After it's all over, see us and we will reimburse you in accordance with the official campaign rules for 1/3 of your newspaper space costs.

G 208-840

DEALERS: By watching this page from month to month you can keep informed of sales promotional campaigns to be sponsored by the Pacific Gas and Electric Company and the Gas Appliance Society. Detailed information will be supplied, as usual, through the mail. If such information is not received, call our local office or write Gas Appliance Society, 1355 Market Street, San Francisco, California.

H. A. Sprowls, vice president, Kentucky Natural Gas Corp., Owensboro, Ky., has recently resigned and will go into the production end of the gas business. Mr. Sprowls has been with the firm since 1935.

Carl Summers, district manager of the Ventura and general pipe line district, Southern Counties Gas Co., Los Angeles, Calif., resigned on July 1 to engage in other activities. His place was taken by **Justin M. Kennedy,** formerly district manager in the Monrovia district.

A. E. Madden, district superintendent of Monrovia, was promoted to the managership of the district and his former position was filled by **H. W. Keiser** who was his assistant.

In the Whittier district of the same company, **R. W. Gregory,** former district superintendent at Santa Barbara, succeeded to a position of district superintendent left vacant by the resignation of **Roy F. Blankenship** who resigned on July 15. **R. C. Merrick** was transferred from the gas distribution department in the Santa Monica district to succeed Mr. Gregory in Santa Barbara.

Edwin Crawford, Ohio Fuel Gas Co., Columbus, Ohio, has been appointed manager of Avon Lake, Bay Village and Dover, Ohio, it was announced by **Roger F. Strauss,** Berea manager.

J. C. Smith, sales manager of Consumers' Gas Co., Philadelphia, Pa., was honored at a surprise dinner upon completing 30 years service with the company. **William S. Bunner,** operating manager, served as toastmaster. Speeches of congratulation and greeting were made by **Robert E. Ramsey,** assistant to vice president of the U.G.I. Co., and **William Naile,** president of the Lebanon Valley Gas Co. President of the company, **Allyn C. Taylor,** presented him with a 30-year service badge.

Harry Jackson, field superintendent of the Fairmont district of the Monongahela West Penn Public Service Co., Morgantown, W. Va., for the last 29 years, and **Everett McElroy,** a gas field employe of the Marion Gas Co., Marion, Mass., and the South Penn Oil Co., have recently retired from service. Mr. McElroy has spent 50 years of active work in the gas business.

R. C. Horn, Wisconsin Public Service Corp., Green Bay, Wis., was recently elected vice president of the Wisconsin Retail Credit Association.

F. H. McCullough, former general sales manager of the Kansas Gas and Electric Co., has been advanced to manager of the Wichita division of the company, according to **M. E. Gill,** president. **F. E. Barr,** former Wichita division manager, was moved to the post of vice-president and assistant general manager. **Sam Brolund** takes over the duties of general sales manager and **C. O. Wiend** will be residential sales manager.

■ ■

Two Ohio Gas Companies Celebrate Safety Record

The Northwestern Ohio Natural Gas Co., Columbus, Ohio, and the Ohio Fuel Gas Co., Columbus, Ohio, announce that their employes have worked 2,190,000 consecutive man-hours without an accident. An engraved plaque has been presented to the group at a dinner party. The 350 employes are responsible for this record since July, 1937.

But These Partners Aren't Through Yet!
SOLD
UK
PAYNE TESTING LABORATORY
AMERICAN GAS ASSOCIATION
APPROVED
Always seen by the prospective PAYNEHEAT customer, these two partners—the "Blue Star" Seal and the Payne Testing Laboratory Tag—help sell furnaces and keep them sold. For behind them is the story of exclusive, quality construction features and advanced design that assure a lifetime of reliable, comfortable, vented warmth to the PAYNE Furnace owner. ☆ And owners that stay sold mean a steadily growing load to the Gas Company merchandising this famous line-up of space heating equipment.
Floor Furnaces—Modern Console Heaters—Duplex Furnaces—Forced Air Units—Zoneair Units—Gravity Furnaces . . a PAYNE gas appliance for any size job. ☆ Utility men—a few territories still open. Write us.
THE IDEAL FUEL GAS
PAYNEHEAT Payne FURNACE & SUPPLY CO., INC.
BEVERLY HILLS • CALIFORNIA

John Blanchfield, Brooklyn Union Executive, Dies

JOHN Blanchfield, assistant vice president, Brooklyn Union Gas Co., Brooklyn, N. Y., died recently at his home at the age of 59.

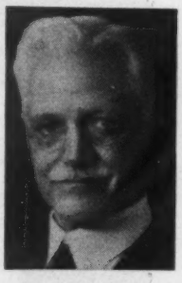
Mr. Blanchfield entered Brooklyn Union in 1919, as an appraisal accountant. In 1920 he was made assistant auditor, and in 1927 he became statistician. In March, 1934, he was elected assistant vice president.

Born on April 4, 1881, Mr. Blanchfield was educated in Brooklyn. Prior to coming to Brooklyn Union he was employed by the Kings County Lighting Co., rising to assistant secretary and auditor.

For many years he was active in the American Gas Association. He was a pioneer member of the managing committee of the Accounting Section and for one term was its chairman. He was considered one of the foremost experts on utility rates. He also served as a member of the managing committee of the Accounting Section of the Empire State Gas and Electric Association.

■ ■

W. S. Ralston, President Chaplin-Fulton Co., Dies



W. S. RALSTON

William S. Ralston, president, Chaplin-Fulton Manufacturing Co., Pittsburgh, Pa., died July 3 after an illness of six weeks at the age of 70 years. He had been connected with Chaplin-Fulton, which was founded by his father, for nearly 40 years.

He attended the Rensselaer Polytechnic Institute of Cornell University and was the inventor of a number of pressure regulators and regulator improvements. He was a member of the A. G. A. and active throughout his lifetime in civic and church organizations in Pittsburgh.

■ ■

Fortune Magazine Carries Article on Natural Gas

An article on natural gas, supplemented with pictures, appears in the August issue of *Fortune* magazine which tells of the growth of the natural gas business since 1921. According to the article, the gas business, which in 1921 amounted to $174,000,000, today is a $500,000,000 business.

Included in the article are items on the four big holding companies, Columbia Gas and Electric Corp., Wilmington, Del.; Cities Service Co., New York City; Electric Bond and Share Co., New York City; and the Standard Oil Co. of New Jersey.

Discussion is also made of conservation of gas and the Federal Power Commission.

■ ■

Arkansas Supreme Court Upholds Permit Issued

The Arkansas state supreme court, at Little Rock, July 1, upheld issuance by the state utilities commission of a permit to the Louisiana-Nevada Transit Co., of Ada, Okla., to distribute natural gas in Arkansas.

The Oklahoma company has constructed a pipe line from the Cotton Valley gas field, in northern Louisiana, to serve Okay and Hope, Arkansas.

It can squash a cannon ball

...or crack an egg!

THE SECRET ? CONTROL

So sensitive are the controls of the giant power hammer that it can strike with the gentleness of falling rain—or the kick of a thousand mules!

The secret of the Harper Burner System's success is more efficient heat *control*. It has taken the guesswork out of top-burner cooking—the result of its accuracy and flexibility of operation is to convince the public that *gas*, today, is even more the ideal cooking fuel.

pyr. 1940, Harper-Wyman Co.

CONTROL *is the secret here, too*

● The Harper Burner System is a patented invention whereby each of the burners on the range is actually 2 burners in 1 . . . a burner within a burner . . . both operated and controlled by a single handle.

This arrangement affords a high-speed STARTING BURNER to *start* foods boiling and for fast frying . . . plus a small, central, economical COOKING BURNER for *maintaining* the cooking. The COOKING BURNER can be used entirely independently of the STARTING BURNER. No other top burner possesses this vital advantage — which insures easy, accurate control: just the right heat for every type of top burner cooking . . . every time.

HARPER-WYMAN COMPANY
8562 Vincennes Avenue, Chicago, Ill.

HARPER BURNER SYSTEM

HARPER BURNER SYSTEM

Demonstrates GAS at its best

SEE OTHER SIDE OF THIS PAGE

Recipe for cooler kitchens...

THE HARPER BURNER SYSTEM

THE HARPER BURNER SYSTEM brought new physical comfort into the kitchen—made possible a much cooler room for the housewife to work in on stifling hot summer days.

The modern insulated oven was a great step forward in this direction. But the Harper Burner System makes more difference than even the best insulated oven. Top burners are used for preparing every meal, while the oven is used only occasionally.

The ordinary top burner wastes heat, releases it into the kitchen, making it hot and uncomfortable.

Tests have been made where the Harper Burner System was compared with ordinary top burners, and the same kitchens under the same conditions *stayed as much as 9 degrees cooler.*

The reason, of course, is the Harper COOKING BURNER. It centers the heat *under* the vessel in which food is being cooked. Its accurate *control* makes possible using just the right amount of heat—no more. It maintains the cooking without overheating the kitchen with wasted gas.

The Harper Burner System provides a burner within a burner. The diagram below shows how the COOKING BURNER operates entirely independently of the STARTING BURNER. Yet both are controlled by the same handle.

We shall be glad to send you, without cost, two booklets that tell the complete Harper Burner System story . . . "Modern Methods of Top Burner Cooking" and "The Greatest Cooking Discovery in 40 Years". They should be valuable to anyone interested in the promotion of gas cooking and gas appliances. *Harper-Wyman Company, 8562 Vincennes Avenue, Chicago.*

HARPER · BURNER SYSTEM ·

SEE OTHER SIDE OF THIS PAGE

Comes Another Wintry Night!

By TOM SCULLY

Retail Sales Promotion,
Philadelphia Electric Company

A FANCIFUL copywriter, cloaked in a dark anonymous, tells us that Rainbottom Uggh, Neanderthal man-about-caves, walked into his favorite night spot, rubbed two sticks together and broke out in flame. As this happened around the time of the third glacial period, we may infer that the management was burnt up, not realizing that Rainbottom was the first man who really carried the torch.

Heating has passed through a series of changes since this memorable occasion until today, when the modern stick-rubber is your gas space heating salesman. Armed with a bundle of facts instead of faggots, your gas heating man is about to gather for his company a respectable number of house-heating contracts and show the gas industry that the few dollars collected from each customer for gas service is really no dough. The sun is about to shine and the first blossom to burgeon will be our little Pinocchio now known as "Operating Revenue."

Let's travel east where chambers of commerce don't lie about the weather.* On the Atlantic seaboard where people live indoors a goodly portion of the year, builders of modest homes are advertising "Gas Heat" as an inducement to sell real estate.

In Suburbia, one enterprising and courageous builder offered a seven-room, two-bath home for $5990. It was a detached house with a lawn to mow and a sidewalk to shovel. Rigid insulation ½ in. thick was provided on all exposed walls and 4 in. of rock-wool keeps the snow from melting on the roof. The estimated monthly use of gas for cooking and water-heating was figured at $4.80 or a yearly take for the local gas company of about $58. Adding the heating estimate to this figure, the gas heating engineer reported an annual revenue of $157 per customer. This means that gas heat will triple the revenue, and the market remains the same that you have already sold automatic water heaters and ranges.

Gas heating must be sold. Its competition has been active for decades and automatic furnaces have been promoted for a generation. The advantages of automatic gas heat are so outstanding that the price difference between it and its competitors really offers value.

Just what can we offer to the American paterfamilias to separate him from a "C" note annually? If we tempt him with an additional meter and the privilege of installing a heater with a blue crackle finish, he's going to scream "Robber!" and call the local gendarme.

Let's give John Commuter a break and his money's worth. Let's sell him Romance in his own home. If we go coy on you: Walk! Don't run for the nearest exit.

If the picture herewith presented seems familiar, remember that all characters and situations are purely fictitious and bear only a coincidental resemblance to any person or event. Cross our heart!

It was a blustery winter evening when John Commuter swung to the station platform. John's soul matched the evening. He had been beguiled into tossing three of his cronies for the refreshments and he threw a tail. Three minutes' brisk walk brought him to the fairest spot on Mortgage Heights,

. . . "And to think I left McGinsberg's law office for a life like this!" . . .

*On this July day in Southern California, where this magazine is published, a brilliant and life-giving sun smiled benevolently from an azure, cloudless sky, its golden beams bounding against the deep and cooling blue of the friendly Pacific to diffuse and cover the Southland with heavenly pleasantness — not too cool — not too warm — just right. — *Editor*

the place where he hung the "Home Sweet Home" sign last Spring. As he fumbled through his pockets for the elusive key, the door swings open and reveals a grimy, stringy-haired creature, feminine in form . . . and is she "in form"? "And to think I left McGinsberg's law office for a life like this," is the greeting. She has him on that one and without waiting for a "So what!" she continues: "Here I am slaving and freezing, nails cracked and a run in these $1.19 stockings, but little you care." It's evident to Mr. Commuter that something is amiss. The Woman, he discovers, is none other than Mrs. Commuter, neé Alicia Blumph, runner-up to Miss Avenue A, 1935. At the moment she looks like the title role for "The Witch of Endor" but eventually Commuter gathers that furnace trouble has reared its ugly head in the love nest. Tomorrow, Mrs. Commuter will have a cold; Junior Commuter will rate another visit from the pediatrician ($5) and life will be a hole of worries for the unoffending Mr. C. Enter the house heating salesman from the gas company!

Come another wintry night and with it, Mr. Commuter. The bleak evening bothers him not at all. No more does he toss for drinks (not with a receipted gas bill in his pocket). This time as the door opens, the aroma of a sizzling steak floats out to greet him. Mrs. Commuter, radiant and happy, with Junior dragging the cat by the tail, advance like the gum-chewers' army about to take Fort Gable and overwhelm the lord of the manor. All this for a small down payment and the balance monthly on your gas bill!

Gas offers the American homeowner everything that the psychologists know he wants. Mr. America wants:

MORE TIME
ROMANCE
PERSONAL ADEQUACY
LONG LIFE
MASCULINITY

And, believe this if you can, Mrs. America wants exactly the same things if not for the same reason. Let's check:

Mr. America wants more time to read; to play; to spend with his family; to attend sporting events; to study his business. He buys an automobile to secure more time to devote to his customers. He buys terse, condensed, abbreviated magazines, a razor that shaves "like a flash," high-test gasoline to get off to a fast start, travels by air, telegraphs, uses a quick-lathering soap and gas heat because it gives him more time!

Mrs. America buys sliced bread, ready-mixed biscuit flour, automatic gas ranges, telephones her grocery order, buys zipper dresses, mechanical refrigeration, vacuum cleaners and cold cream that cleanses while she sleeps. Gas heat will release her from furnace-tending, fuel ordering, frequent house cleaning and stair-climbing. Mrs. America wants time to keep herself attractive, attend meetings, play bridge, entertain and hold Mr. America's attention!

The desire for romance is exemplified also by the wish to travel. Watch any man in a restaurant. Does he eye the pretty waitress? If his hair is thin, notice the way he spreads the remaining strands to shield the bald spot. Women buy soap with vitamins, try new nail polishes, get permanents, wear sheer hose and watch their weight.

Everyone admits the desire for adequacy and long life but few women will admit the desire to be masculine. Notice the popularity of sport clothes that copy men's styles. Beach pajamas are another indicator. Women buy, by preference, from salesmen rather than saleswomen. Women enter politics and smoke for the same reason, while men boast of long golf drives, fish, and hunt, while their 16-year-old sons long for the day when they can shave twice.

Automatic gas heat offers everything. What does your prospect want? Romance? Gas heating offers him time to prepare his speech for the Ladies' Auxiliary.

Is long life his desire? Automatic gas heat offers him freedom from worry, relief from colds, climbing stairs, over-exertion!

Despite all the advantages that automatic gas heating offers, it still requires the ability of a smart gas salesman to bring them to the customer. The salesman with imagination plus an understanding of human nature will sell gas heating just as he has sold everything else that makes life more than just living.

Bill is a gas salesman who knows human nature. He was presenting an estimate for gas heating to a homeowner whose criterion of values is "fuel cost." The estimate was higher than Bill had hoped but the engineer who checked the heat loss considered the absence of insulation, the lack of storm sashes and all the other factors that determine operating cost.

Bill confronted his prospect and presented the estimate after rebuilding his gas story. "The figure in the estimate is more than you expected to pay," Bill continued. "Perhaps it's more than you think you can afford, but Jones, your next door neighbor, feels the cost of gas heat is proportionate for what it offers."

Bill's voice dropped into a matter-of-fact register as he threw his weight to old "personal adequacy." He explained that Jones, a neighbor, used gas for heating but implied that Jones was a successful business man who could afford anything that he wanted. The prospect reached for the order blank, a distance of almost two inches, and signed, assuring Bill that Jones wasn't the only fellow in the street who could afford gas heating.

"The luxuries of one generation," said the philosopher, "become the necessities of the next"; and gas heating is rapidly becoming the accepted standard for the winter conditioning of homes. To hasten the millenium: Take a house heating salesman, properly seasoned, add a generous dash of enthusiasm, equip with a fair rate and a personal financial incentive. Let him use his imagination and help him with a strong advertising campaign and, as Brillat-Savarin promised when he cooked up a tasty dish, "You shall see wonders!"

■ ■

CALENDAR

August

Appalachian Gas Measurement Short Course—Third annual meeting, University of West Virginia, Morgantown, Aug. 19-21.

September

Empire State Gas and Electric Association—Annual Convention, Westchester Country Club, Rye, N. Y., Sept. 26-27.

Pacific Coast Gas Association—Annual convention, Hotel del Coronado, Coronado, Calif., September 18-20.

October

American Gas Association—Annual Convention, Atlantic City, N. J., week of October 7.

Public Utilities Association of West Virginia—Twenty-second annual meeting, The Greenbrier, White Sulphur Springs, October 4-5.

December

National Association of Railroad and Utility Commissioners—Miami, Fla., Dec. 10-12.

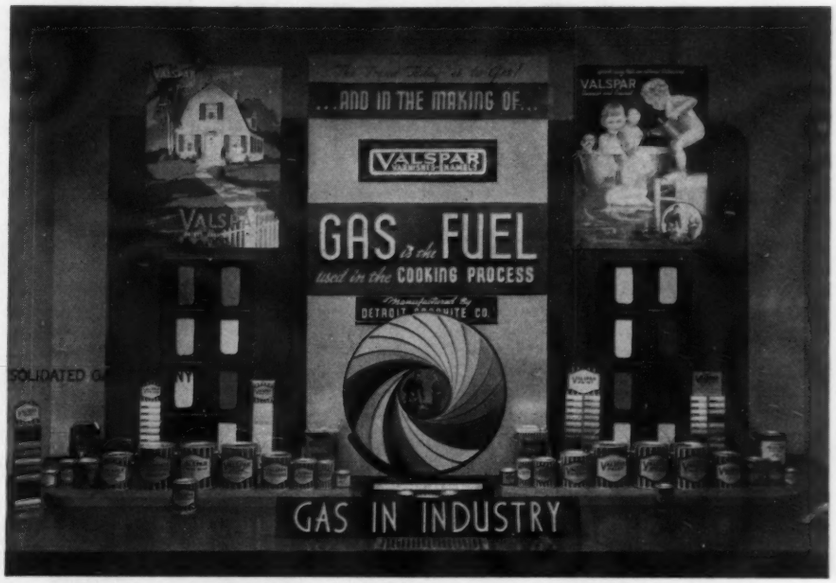
Plan To Buy Gas Utilities Gets SEC Approval

J. Leroy Underhill, North Attleboro, Mass., was recently given approval by the Securities and Exchange commission, for the purchase and control of two gas companies for approximately $137,000. Mr. Underhill proposed to buy from Walnut Electric and Gas Corp., Philadelphia, Pa., all outstanding securities of its subsidiary, Wanoat Associates, Inc., North Attleboro, Mass., which owns all the outstanding securities of North Attleboro Gas Co., and Ware Gas Co., Ware, Mass.

■ ■

The marked increase in commercial utilization of gas fuel during the past two years is extremely important. This is a fairly constant load, and, therefore, desirable; and the future of air conditioning, gas refrigeration, and development of gas engine power is practically unlimited.

• LLOYD C. THOMAS, Michigan Consolidated Gas Co., Detroit, Mich., in a paper, "The Detroit Experiences With Window Displays of Gas in Business," presented before the American Gas Association Conference on Industrial Gas Sales, Commodore Perry Hotel, Toledo, Ohio, March 28-29, 1940.—(Absract by G A S.)



A sample of one of Michigan Consolidated Gas Co.'s "Gas in Industry" window displays, a series which did much to bring to the public's attention the importance of gas as the fuel used in the manufacture of products used by the public in every-day life.

The People Stopped, Looked and Inquired

IN 1933 our company decided to try out industrial window displays. A careful survey was made of its possibilities, of the potential sales value of such displays and the general methods of building them up. We were well aware that the value of such a window from a purely industrial gas sales standpoint was practically nil, the ratio of industrial consumers being so small in proportion to the total number of meters set.

We felt, however, that their educational value to the general public as a whole should bring definite results. They should increase the public's confidence in our company and its product by having in front of them a name of a manufacturer or product that is a household word. Such names as Packard, Dodge, and Fred Sanders. Such products as automobile engines, toys, aeroplanes and food stuffs.

We had originally planned on making general displays, borrowing from various manufacturers such materials as would be necessary to make up a display. However, our consumers showed such interest in our plans and in offering their cooperation, that we changed our original plans and started on a program of individual displays—a program which we are following today. An individual display is a display of some one product or group of related products manufactured in some plant in Detroit. These products must be processed with gas.

From a waiting list we choose the type of product that we wish to display. We then contact the manufacturer to advise him that we will be ready at a certain time to install his display. Our industrial display man then checks the products and advises the manufacturer as to the material required for the display. With this information in hand the industrial man working with the display man works out the general story to be told by the display—the general layout, backgrounds, lighting, etc. It takes about two weeks to lay out and install a display and the display stays in our windows approximately 30 days. We have found through experience that this is too long for some type of displays and are arranging at this time to try some displays for shorter periods. We have also found that since our windows have been rebuilt and better lighting facilities made available that our windows are more interest provoking.

Whenever possible, we try to use motion in our displays. The use of a turntable, an automobile engine in motion, and various other mechanical devices greatly enhance effectiveness in attracting attention. Motion, however, is appropriate only for certain occasions and good judgment should be shown in using it.

In the use of colors it is desirable to use those that harmonize with each other, that blend in with the season, and are compatible with the material being used.

We have had some rather interesting comments and experiences since we installed our first industrial gas window display over six years ago. The most outstanding incident occurred a day or so after installing a certain coffee display. We used a partial collection of antique coffee pots gathered by this coffee man from all corners of the earth. A middle-aged woman came into our office demanding to see the man in charge of *that* window display. Here were the Swedes, said she, the greatest coffee drinkers on earth, and no Swedish coffee pot in the display. What in the world could we be thinking of. The outcome of this complaint was that the following day she came back with an antique Swedish coffee pot that had been in her family for years. Needless to say we immediately placed her coffee pot in the display with an appropriate card, alongside the others.

On the occasion of a certain toy display we had so many people come into the building to buy toys that we were forced to put a card in the window stating where the toys could be bought.

OIL & GAS *Equipment Review*

Reg. U. S. Pat. Off.

• **THE READER'S ATTENTION is called to the coupon in the lower right hand corner of this page. This coupon is printed for the reader's convenience and will enable him to obtain with minimum effort further information on any of the items or catalogs listed in this department. All he has to do is to "ring" on the coupon the number that corresponds to the number printed over the item in which he is interested, clip out the coupon, and mail it to GAS, 1709 West Eighth Street, Los Angeles, Calif. — Editor.**

■ ■

For more information **"ring 3882"** on coupon

Threaders

Trade Name: Ridge Rachet & Three-Way Threaders.

Application: For threading small pipe — ⅛ in. to 1¼ in.

Features Claimed: The threaders are made of all-steel malleable-alloy. Separate sets of of semi-high-speed tool steel chaser dies are accurately cut, easily removed for regrinding. In No. OOR, die heads are locked in or removed by a pull of the rachet knob. In Nos. OR and 11R die heads push out easily for changing, snap into rachet ring from either side, can't fall out. No special dies are needed for threading pipe close to wall; it is only necessary to turn dies upside down and shift to positions marked on die-heads. A carrier which conveniently holds the rachet ring and set of dies is supplied with all complete sets at no extra cost. — *The Ridge Tool Co., Elyria, Ohio.*

■ ■

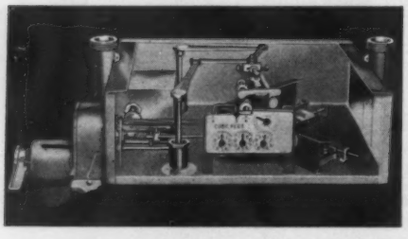
For more information **"ring 3883"** on coupon

Prepayment Meters

Trade Name: American Prepayment Meter.

Application: For metering gas where prepayment is desirable, such as at auto camps, or where prospect does not wish to run up a bill.

Description: The modern 5-B meter embodies all the practical operating advantages and engineering improvements which have accumulated in the construction from 1859 to the present date. In operation at rated capacity, the revolutions are at a minimum, with a consequent minimum amount of wear. The meter has sufficient capacity to handle normal domestic loads with a safe margin for reasonable surplus, and possesses maximum safeguards of close accuracy in gas measurement. The heat resistant index glass has a metallized edge. This edge, fabricated to full thickness, permits of a perfect metallic bond and a gas-tight seal in soldering the glass directly to the frame. The index frame is designed so that the soldered seal is made deep and binding. As an additional protection against rough handling or excessive impact, the frame extends beyond the glass. The index box assembly which remains leak-proof, is tested to withstand a pressure in excess of service requirements. All flange screws for these prepayment meters are die-cast. The material is die-cast under a pressure of 16,000 to 20,000 lbs. per square in., so that the castings are dense compared to customary castings and the tensile strength is increased approximately 50%—with a consequent increase in the wearing qualities. — *American Meter Co., 60 E. 42nd St., New York, N. Y.*



■ ■

For more information **"ring 3884"** on coupon

Gas Indicator

Trade Name: "Explosimeter" Combustible Gas Indicator.

Features Claimed: The Explosimeter Model 2 is stated to be compact, strongly built and light in weight, with an electrical circuit featuring a single filament and single control knob. One-hand operation—leaving one hand entirely free to handle sampling line or probe.

Description: The flow system is cast integral with case, without tubing or connections to leak, and a built-in filter chamber is provided to trap dust and moisture. This filter changer will also accommodate a charcoal cartridge for proper differentiation between illuminating gas and condensable, combustible vapors such as gasoline. The Model 2 is powered by standard flashlight batteries contained in a separate compartment from the working parts. The batteries are isolated from working parts of the Explosimeter — no exposure of working parts when batteries are changed; no possibility of electrolyto from discharged cells affecting electrical controls. Another feature is the On-Off Signal Bar on the single control knob which is raised prominently in view when current is turned on, and drops flush with the knob when current is switched off — thus preventing the user from unknowingly leaving the instrument with current on. A spare filament is contained in the case. — *Mine Safety Appliances Co., Braddock, Thomas and Meade Sts., Pittsburgh, Pa.*

■ ■

For more information **"ring 3885"** on coupon

Cathodic Corrosion-Eliminator

Trade Name: Rexselen Cathodic Corrosion-Eliminator.

Application: Especially designed for cathodic pipe protection.

Features Claimed: The Eliminators require little maintenance throughout their service life, and because of stability of output, visits by an attendant are necessary only to determine and adjust current to new requirements. A feature is that high efficiency is sustained throughout the long life of the rectifiers as only a slight increase in forward resistance occurs during the first 10,000 hours of operation, after which no change takes place. Rexselen Eliminators have no moving parts for the rectifiers consist of rigid discs and no cooling fans or blowers are necessary. — *Electrical Facilities, Inc., 4224 Holden St., Oakland, Calif.*

■ ■

For more information **"ring 3886"** on coupon

Gage-Thief Valve

Trade Name: BS&B Gaging and Thiefing System.

Application: For lubricating the gage tape and the thief into the tank without opening it to atmosphere.

Features Claimed: The system will prevent evaporation losses, and in sour oil countries, corrosion of tanks will be lessened, and in some instances stopped entirely. When the stock tank is kept under pressure, the contents are not exposed to oxygen in the air. Gases and fluids do not attack the tubing, well connections, separator or pipe lines to storage tanks. They will not attack the tanks either if the tankage is kept under gas pressure. It is not necessary for gagers to wear gas masks against poisonous gas in certain sour oil sections when using this gaging system. — *Black, Sivalls & Bryson, Inc., Box 1377, Oklahoma City, Okla.*

This coupon will bring you further information, catalogs, etc., concerning products described in the Oil & Gas Equipment Review Department of GAS. "Ring" the numbers of items which interest you, sign and mail this coupon to **GAS, 1709 West Eighth Street, Los Angeles, Calif.**

3882	3883	3884	3885	3886	3887	3888	3889	3890	3891
3892	3893	3894	3895	3896	3897				

August, 1940

Name.....**Position**.....

Company.....

Address.....

City.....**State**.....

Before You Buy, Consult the *Latest Trade Literature* Concerning Equipment

This department of GAS will gladly mail you without obligation any of the selected bulletins listed below. Use the coupon on page 55 of this issue, indicating by number above those you desire.

For more information **"ring 3887"** on coupon

The General Electric Co. has just printed a descriptive sheet on the application of copper oxide rectifiers for cathodic protection of pipe lines. The bulletin includes illustrations showing both the internal and external appearance of this line of rectifiers. Complete description of the advantages and construction is also listed.

For more information **"ring 3888"** on coupon

Bulletin S-550-B7, published by Worthington Pump & Machinery Co., deals with the gas engine, and describes the specifications of their 25-in. stroke engine.

For more information **"ring 3889"** on coupon

"Hancock Steel Valves" is the title of Manning, Maxwell & Moore's new bulletin No. 5-7000, covering material specifications of all metals used in valves, and complete dimensions of all types of valves.

For more information **"ring 3890"** on coupon

A folder describing low-pressure all-iron gate valves for industrial applications and other various uses has just been issued by the Koppers Co.

For more information **"ring 3891"** on coupon

"The Speed Master Melting Kettle" for tar, asphalt, or pitch, and featuring "Kwiklean" is described and illustrated by the Hauck Manufacturing Co. in their catalog No. 658.

For more information **"ring 3892"** on coupon

Spaders and trench diggers are illustrated and described in the new Sullivan four-page, two-color bulletin No. 87-K.

For more information **"ring 3893"** on coupon

Bulletin WT29 illustrates in detail various types of welding outlets for piping and has just been published by the Bonney Forge & Iron Works.

For more information **"ring 3894"** on coupon

A complete new line of Roper Rotary pumps is shown in George D. Roper's catalog No. 939.

For more information **"ring 3895"** on coupon

Two descriptive folders telling how to make oil well chains last longer have just been printed by the Chain Belt Co.

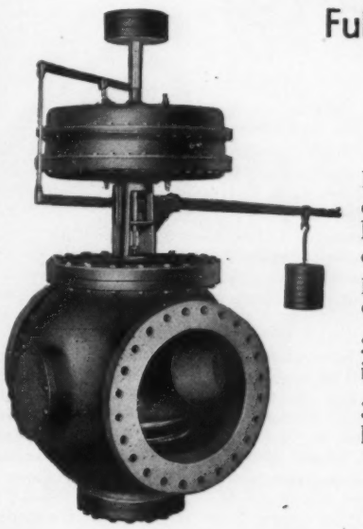
For more information **"ring 3896"** on coupon

Bulletin 703, containing complete information on low pressure gas service regulators, has just been released by the Fisher Governor Co. The bulletin describes and illustrates the company's series of regulators.

For more information **"ring 3897"** on coupon

Nash pumping equipment, air compressors and vacuum pumps for use in the petroleum field are described extensively in Bulletin No. 252, recently printed by the Nash Engineering Co.

A PRODUCT OF FORTY YEARS' EXPERIENCE——



Fulton Duplex Sensitive Gas Governor Provides:-

1. Extremely accurate control of either natural or manufactured gas. Reduction of frictional surfaces and extraordinary enlargement of diaphragm area give assured delicacy of operation.

2. Immunity of regulator to chemical action of manufactured gases.

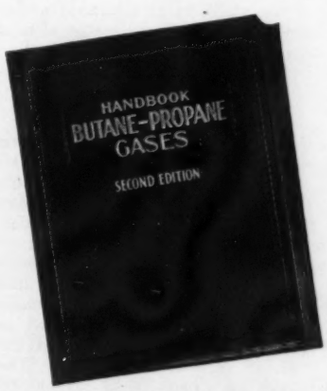
3. Easy, quick installation. No troublesome accessories.

Write for Bulletin 1142, also New Catalog

The CHAPLIN-FULTON MFG. CO.

28-40 PENN AVE. CF PITTSBURGH, PA.

HANDBOOK BUTANE-PROPANE GASES



415 Pages

CONTENTS: Semi-Bulk Distribution: Use of Butane in Buses: Combination Propane Operated Utility Plant: Use in Internal Combustion Engines: Design and Installation of Storage: Supply from Petroleum Refineries: Engineering Data on the Lower Olefins: Domestic Appliance Testing and Utilization: Economical Comparisons with Coal, Oil, Electricty, Producer Gas, Manufactured Gas: Town Plants: Manufacture from Natural Gas: Specal Uses: Volume Correction Factors: Transportation: Use with Other Gases: Analysis and Testing: Properties of Mixtures: Bottled Gas Distribution: Bibliography: Central Plant Directory: Catalog Section.

SECOND EDITION **(Latest Revision Nov., 1938)** **$5.00** ***Plus Postage***

We pay the postage on orders accompanied by remittance.

Published by Western Business Papers, Inc., publishers of **GAS** *The Natural Gas Magazine*

BUTANE-PROPANE News
1709 W. 8th Street
Los Angeles, Calif.

CURRENT Reading

"The Annual Report to Employes" — Prepared by the Policyholders Service Bureau of the Metropolitan Life Insurance Company. The report shows the varied and ingenious ways that financial statements are being presented and interpreted in these employe reports so as to make them understandable to those unversed in accounting terms. It describes and illustrates the different methods of presentation employed, the media through which the report is transmitted, subject matter, physical make-up and related topics.

Natural Gas—*Fortune Magazine*, August, pp. 56, etc. An article on natural gas, supplemented with pictures, which tells of the growth of the natural gas business since 1921. According to the article, in 1921 the gas business amounted to $174,000,000 and is a $500,000,000 business today. Included in the article are items on the four big holding companies, Columbia Gas and Electric Corp., Wilmington, Del.; Cities Service Co., New York City; Electric Bond and Share Co., New York City; and the Standard Oil Co. of New Jersey. Discussion is also made of conservation of gas and the Federal Power Commission.

API Std. 5-A "Casing, Drill Pipe, and Tubing"—Published by the American Petroleum Institute's division of production. This tenth edition replaces the August, 1935, ninth edition and is a 120-page booklet. Price, 75c.

Maintenance of Multicylinder Engines in Sour Gas Areas — D. H. Stormont. *Oil and Gas Journal*, June 13, 1940, pp. 48-49. In the sour-gas areas of West Texas and New Mexico operators are devoting increasing attention to the operation and maintenance of multicylinder gas engines used for pumping oil wells. These efforts are directed primarily toward determining operating conditions at which the least engine trouble is encountered and, to a limited extent, use of engine parts more resistant to the effects of the corrosive gas. As a general rule the practice of attempting to remove the hydrogen sulfide by washing the gas through an alkaline solution has been abandoned due to the additional expense and trouble of keeping the solution unsaturated.

The Compressibility of Gases — G. G. Brown. *Petroleum Engineer*, May, 1940, pp. 25-28. Part 5. Vapor-Liquid Phase Equilibria in Hydrocarbon Systems.

Deviation of Natural Gas from Boyle's Law — F. H. Dotterweich. *Refiner*, May, 1940, pp. 86-88. A review of the literature on, and a mathematical treatment of, the subject.

Report on Petroleum and Natural Gas Research — Bureau of Mines, U. S. Department of the Interior. This report covers the work of the Bureau's Petroleum and Natural Gas Division in the fiscal year ended June 30, 1939. It reviews briefly the changing scope of the Division's activities to meet new conditions in the industry, and tells how the various projects are conducted in the stations and offices at Bartlesville, Okla., Dallas and Amarillo, Texas, Laramie, Wyo., and San Francisco, Calif. Also it stresses the interrelation of certain fundamental physical and chemical laws that hold true for hydrocarbon fluids regardless of their environment and the bearing of such laws upon the maximum extraction of oil from the earth.

The work accomplished and in progress on each of nearly 20 items of research on production and transportation is discussed in the report. In the field of transportation, research of the Bureau on "hydrates" in gas pipe lines has helped natural gas companies to maintain constant supplies of fuel at the city gates of many communities.

More than a dozen of the Division's studies pertain to chemistry and refining of petroleum and related substances. The report closes with a review of extraction of helium from natural gas at the Amarillo plant of the Bureau of Mines, the only plant in the world now operating where this inert gas is obtained on a large scale.

Recent Progress in Petroleum Development and Production — H. C. Miller and G. B. Shea. 1940.

Steady Flow of Gas-Oil-Water Mixtures Through Unconsolidated Sands — M. C. Loverett and W. B. Lewis. *Petroleum Technology*, May 1940, p. 9. The dynamic behavior of a multiple fluid system is completely describable in terms of driving forces and resistances to flow. The latter are proportional to the viscosity of the fluid under consideration and inversely proportional to a property of the system termed the "effective permeability" to that fluid, a property therefore defined by this relation.

Describing Three-Plant Recycling Operations of Tide Water Associated Oil Co. and Seaboard Oil Co. in Anderson County, Texas — *Oil and Gas Journal*, May 9, 1940, p. 34. Devoted to the construction and processing features of the three-plant recycling operation of the Tide Water Associated Oil Co. and Seaboard Oil Co., located in Anderson County, Texas. The three plants are interconnected and largely operated as one unit which now constitutes one of the industry's major recycling operations. The entire operation has a capacity of 125,000,000 cu. ft. daily with an output of approximately 120,000 gals. daily.

Gas Dehumidification Prevents Hydrate Freezing Troubles — E. G. Hammerschmidt. *National Petroleum News*, May 15, 1940, pp. R-162, etc. Various methods of eliminating hydrate freezing troubles in natural gas and natural gasoline plants are summarized. In general, all the methods remove water condensate and sufficient water vapor from a system so that additional condensation cannot occur at the minimum temperature and/or maximum operating pressure encountered in the system. A number of dehumidification processes have been developed, involving contact with both solutions and solids. Seven gas-washing solutions are described.

Retrograde Condensation and Distillate Wells — F. W. Laverty. *Oil Weekly*, May 6, 1940, pp. 13-18. Normally, in compressing a mixture of hydrocarbon gases and cooling them to a constant temperature, the higher the pressure the more liquid will be condensed. This is true only to a critical point known as the retrograde point and, above it, the opposite occurs. Author applies this phenomenon to a hypothetical case, and also to the profitable operation of distillate wells.

API Std. 5-G-3 "Ring Joints for Steel Flanges and Flange Unions" — Published by the American Petroleum Institute's division of production. The second edition, tentative, is a 108-page booklet replacing the September, 1937, first edition. The revisions cover new specifications and changes made at the Institute's tenth annual meeting, and also include material published in supplements to the previous editions. The price of this booklet is 75c.

Report of Investigations 3501 — Information Division, Bureau of Mines, Washington, D. C., R. A. Cattel and others. Annual report of the petroleum and natural gas division, fiscal year, 1939. In this annual "stock taking" of the bureau's research and operations dealing with petroleum, natural gas, helium, and their conservation, the authors have written it to inform consumers, research workers, and operating personnel of the industry, concerning the types of studies that are being pursued by the Bureau.

Laws of Fluid Flow in Rough Pipes— J. Nikuradse. *Petroleum Engineer*, June, 1940, pp. 124, etc. Experimental work extends the determination of friction factor, f, into the region of flow conditions of existing high-pressure transmission lines.

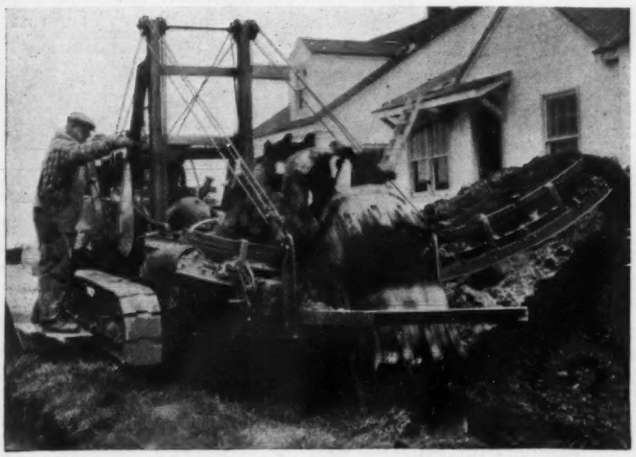
Applications of Gas to Air Conditioning — G. E. May. *Heating, Piping and Air Conditioning*, June, 1940, pp. 395-399. This paper briefly describes the various systems in which gas is used for air conditioning and points out some of the more interesting characteristics of each. These systems are classified according to functions and described in groups.

Welding of Cast Iron — L. Tibbenham. *Iron Age*, June 27, 1940, pp. 36-38. The author covers the various problems encountered in the welding of cast iron, and describes in detail several techniques that have resulted in satisfactory welds. This is a paper which was recently read before the East Anglian section of the Institute of British Foundrymen.

Black Widow Spiders — *National Safety News*, June, 1940, pp. 40, etc. This article gives the characteristics of black widow spiders, lists methods by which they may be largely eliminated, and explains recent procedures for treatment of bites. Industrial Data Sheet No. D-Gen. 8.

Business, Management, and Character — Roger W. Babson and T. H. Schutte. Published by Christopher Publishing House, Boston, Mass. Two philosophical essays discussing the contributions to character through business and industry, and through management.

YOU'RE ALL SET!



with "CLEVELANDS"

DIG "ANYWHERE-ANY TIME"

A balanced, correctly engineered combination of what is needed, "Clevelands" produce more "performance per pound"—pay for themselves quicker because of the additional savings they make for you.

WATCH YOUR COSTS GO DOWN

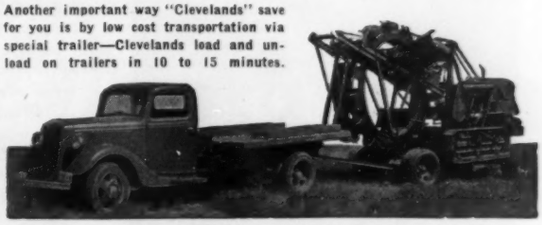
- You have a machine that fits into "more jobs"; may even, because of a single, exclusive feature, "pay out" on one job.
- You have equipment that you can move to and from the job, faster with less expense and bother.
- You are relieved of the high maintenance cost of obsolete equipment.
- Because of "Clevelands" dependability you can rely on steady, daily output, allowing you to plan your work better and get more efficiency from your gang.
- You save money on "Clevelands" speed and ability to "cut the buck" on tough jobs.

THE CLEVELAND TRENCHER COMPANY

"Pioneer of the Small Trencher"

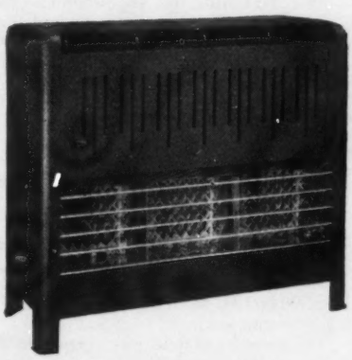
20100 St. Clair Ave. **Cleveland, Ohio**

Another important way "Clevelands" save for you is by low cost transportation via special trailer—Clevelands load and unload on trailers in 10 to 15 minutes.



CLEVELANDS

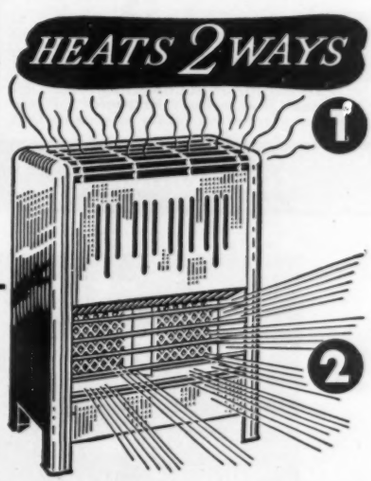
A SUCCESSFUL COMBINATION



Radiant Heat and Warm Air Circulated Heat

Here is the No. 60 design—input rating of 60,000 B.t.u. per hour. Other models—all approved by the A. G. A. Testing Laboratory—are available in 40,000 B.t.u. and 20,000 B.t.u. per hour capacities. Send for Bulletin RC-40-2 for full color illustrations and complete sales information.

Now you can sell your customers on more economical and comfortable heat through the double heating benefits of the new Humphrey Radiantfire Circulator. The "open front" design gives radiant heat output without loss from obstruction. Cleverly designed heat-exchangers in the cabinet add the room-warming benefits of circulated warm air.



Radiant sunlike heat at the "sitting level"—where warmth is most appreciated—plus complete, quick circulation of heat throughout the room are the double benefits made possible by the "open front" of Humphrey Radiantfire Circulators. This feature can be easily demonstrated on your sales floor.

GENERAL GAS LIGHT COMPANY

KALAMAZOO, MICHIGAN

23 Warren St., NEW YORK CITY 2nd Unit Santa Fe Bldg., DALLAS 475 Eleventh St., SAN FRANCISCO

Canadian Gas Association Holds 33rd Annual Meeting; J. B. McNary Named President

ONE hundred and seventy-six gas men from western Canada and the Pacific Coast attended the 33rd Annual Convention of the Canadian Gas Association at Jasper Park Lodge, Alberta, July 2-5. The Pacific Coast Gas Association participated in the meetings, which were presided over by Julian Garrett, president of the association.

To J. B. McNary, manager and secretary of the Canadian Meter Co., Ltd., Hamilton, Ont., goes the honor of being the first manufacturer to be elected president of the Canadian Gas Association. Mr. McNary has been a member of the association since its early days and is also a director of the Natural Gas and Petroleum Association of Ontario.

The elections at Jasper Park also showed the following members placed in office for the year 1940-41:

President: J. B. McNary, manager and secretary, Canadian Meter Co., Ltd., Hamilton, Ont.; *first vice president:* W. J. Pead, Jr., chief engineer Gas Department, Montreal Light, Heat & Power Con., Montreal, Que.; *second vice president:* Frank J. Howell, division superintendent, Dominion Natural Gas Co., Ltd., Brantford, Ont.; *secretary-treasurer:* George W. Allen, Toronto, Ont.

Members of the Executive Committee are: J. C. Dawson, superintendent, gas department, Quebec Power Co., Quebec City, Que.; W. H. Munro, general manager, Ottawa Gas Co., Ottawa, Ont.; G. W. Page, superintendent, Montreal Coke and Manufacturing Co., Montreal, Que.; T. P. Pinckard, vice president and general manager, United Gas and Fuel Co., Hamilton Ltd., Hamilton, Ont.; Julian Garrett, general manager, Northwestern Utilities Ltd., Edmonton, Alberta; K. L. Dawson, superintendent, gas department, Nova Scotia Light and Power Co., Ltd., Halifax, N. S.; A. Mackenzie, sales manager, General Steel Wares, Ltd., Toronto, Ont.; John Keillor, gas engineer, B. C. Electric Railway Co., Ltd., Vancouver, B. C; W. C. Philpott, works superintendent, Consumers' Gas Co., of Toronto, Toronto, Ont.; and Alan H. Harris, Jr., manager gas utility, Winnipeg Electric Co., Winnipeg, Manitoba.

Prominent among gas executives to speak at the sessions were Major T. J. Strickler, vice president and general manager, Kansas City Gas Co.; S. B. Severson, vice president, Dominion Natural Gas Co., Ltd., Buffalo, N. Y.; James F. Pollard, president, Seattle Gas Co.; F. M. Banks, vice president, Southern California Gas Co.

R. M. Conner, director of the A.G.A. Testing Laboratories at Cleveland, and R. S. Agee, sales promotion manager for the range division of the Association of Gas Appliance and Equipment Manufacturers, were speakers at the Friday general meeting.

President Garrett, general manager of Northwestern Utilities, Ltd., Edmonton, Alberta, presided over the general sessions on Wednesday and Friday. Manufactured Gas Sessions were led by J. D. von Maur, engineer of distribution, Consumers Gas Co. of Toronto; Natural Gas Sessions by S. B. Severson; and the Sales Forum by W. C. Mainwaring, general sales manager, B. C. Electric Railway Co., Vancouver.

■ ■

Joint Annual Meeting to Be Held in Sulphur Springs

The twenty-second annual meeting of the Public Utilities Association of West Virginia will be held at The Greenbrier, White Sulphur Springs, October 4-5. Pursuant to a resolution adopted at the last annual meeting, this year's convention will be held in conjunction with the Virginia Utilities, according to president Aubrey McDaniel.

Mr. McDaniel has appointed the following committee on entertainment and program: W. F. Ficklen, chairman; Aubrey McDaniel, ex-officio; A. C. Spurr; Arthur M. Hill; L. A. Wildman; A. Bliss McCrum; James C. Smith, chairman golf committee.

■ ■

Wildcat Well Opens New Gas Field in Oklahoma

A wildcat brought in July 3 by H-P Gas Co. south of the Lovell oil field in western Logan County, Okla., cleaned the hole for 12,500,000 ft. of dry gas per day and opened a new gas field.

A second gas field was opened in Pontotoc County, Okla., when Kerlyn Oil No. 1, west of Francis, June 24 made an estimated 18,000,000 ft. a day with only a showing of oil. First well in the area was the Kerlyn No. 1. Logan, which at 2007 ft. produced an estimated 8,000,000 ft. of gas a day.

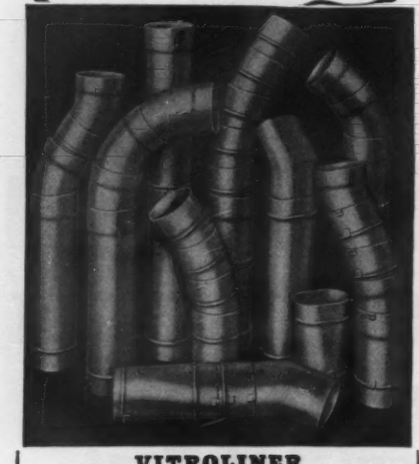
■ ■

Gas Wonderland Features Weekly Quiz Contest

A quiz contest is being held every Saturday evening from 8:30 to 9:00 and broadcasted over station WINS and the New York Broadcasting System from the Court of Flame Theatre of Gas Wonderland at the New York World's Fair.

Contestants consist of two teams of five persons each, selected from employes of various fair exhibits and members of the studio audience.

ELIMINATE CONDENSATION TROUBLE



VITROLINER
—the permanent chimney lining that totally eliminates chimney deterioration caused by acid-bearing moisture deposited by all types of fuel. Made of Armco Ingot Iron, vitreous enameled both inside and out.
Also manufacturers of Condensation Eliminator and Howle Heat Extractor. Write for free condensation folder and price list.

CONDENSATION ENGINEERING CORPORATION
2515 Archer Avenue - - Chicago, Illinois

SEMET-SOLVAY ENGINEERING CORPORATION

Blue Gas Plants
Water Gas Machines
Washer Coolers
Naphthalene Scrubbers
Gas Purifiers
Condensers
Waste Heat Boilers
Producer Gas Plants

40 RECTOR STREET, NEW YORK, N. Y.

JOHN ZINK BURNERS

THE FLOOR FURNACE that Delivers Full Capacity

A 50,000 B.t.u. John Zink Floor Furnace continues, during its long life, to be a 50,000 B.t.u. furnace.
One relatively large gas port eliminates stoppage by dust, lint, and corrosion as usually experienced with burners having several tiny ports.

50,000 B.t.u. Size . . . . . Grille 20"x30" . . . . . Floor Opening 20¼"x30¼"
25,000 B.t.u. Size . . . . . Grille 16"x20" . . . . . Floor Opening 16¼"x20¼"
68,000 B.t.u. Size . . . . . Grille 24"x40" . . . . . Floor Opening 24¼"x40¼"

●

ANY GAS APPLIANCE IS ONLY AS GOOD AS ITS BURNER

"John Zink Burners Must Be Good"

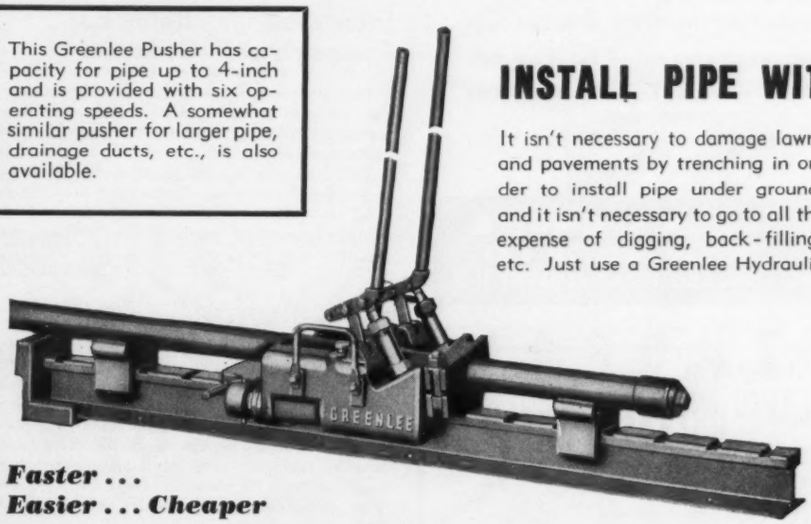
JOHN ZINK COMPANY

Burners • Floor Furnaces • Unit Heaters

TULSA, OKLAHOMA **NEW YORK CITY**

STOP *Tearing Up Lawns and Pavements!*

This Greenlee Pusher has capacity for pipe up to 4-inch and is provided with six operating speeds. A somewhat similar pusher for larger pipe, drainage ducts, etc., is also available.



Faster . . .
Easier . . . Cheaper

Because it reduces trenching to a minimum and because of its arrangement for speed, this pusher is able to save much time and labor. This has been proved many times under many different conditions. Let us tell you all about it.

INSTALL PIPE WITH THE GREENLEE *Hydraulic* PIPE PUSHER

It isn't necessary to damage lawns and pavements by trenching in order to install pipe under ground, and it isn't necessary to go to all the expense of digging, back-filling, etc. Just use a Greenlee Hydraulic Pipe Pusher. It only requires a trench long enough for the pushing operation, and one man, standing in a comfortable position, can push the pipe where it is wanted, simply by pumping the handles.

This tool is compact, easy to handle and simple to operate. Pumping the handles sets up hydraulic pressure within the cylinders, causing the body of the pusher to travel on the notched steel base and to push the pipe through the ground. The pipe clamp is reset only when the pusher reaches the end of the base.

GREENLEE TOOL CO., 1700 Columbia Ave., ROCKFORD, ILLINOIS

A. G. A. National Home Survey Shows Large Percentage New Home Owners Use Gas

THE American Gas Association has recently completed its second national new home survey which shows a preference for gas service in new one- and two-family homes.

Through the cooperation of gas companies representing two-thirds of the American gas industry, it was possible to check the utility services in more than 128,000 new one- and two-family houses erected during 1939. This large proportion of the entire one- and two-family house construction in the United States during 1939 gives a picture of the extent to which gas service has been accepted and shows 61.8% of the new home owners reported in this survey are using gas heat; 77.4% of the new homes have installed gas water heating equipment, and nine out of ten are cooking with gas. The actual count shows that 11,216 homes out of the total reported are now using gas ranges.

In each of these fields, the 1939 figures reflect a substantial increase in the trend to gas service in homes over that reported for the homes erected during 1938. The increase in the use of gas for house heating amounts to 4.2%, while the increase in cooking and water heating is a little under 3%.

Breaking down the report so as to show the position of natural gas, it is clear that the swing to gas as a fuel is most pronounced in those 40 states which, in whole or in part, have the benefits of this natural fuel. The use of gas for house heating, as indicated in this survey, increased from 77.8% in 1938 to 87.6% in 1939 where natural gas was available. In a number of communities, 100% of the new homes are equipped with gas for heating, water heating and cooking, the survey shows.

■ ■

Sweden Pays Tribute To Servel Electrolux

Servel, Inc., Evansville, Ind., was paid a tribute on the commercial success of Servel Electrolux refrigerators recently when the Royal Swedish Academy of Science presented gold medals to Carl G. Munters and Baltzar von Platen, the scientists who perfected, in 1923, the basic principle of refrigeration used in Servel Electrolux. The medal was presented 17 years after the invention because it is given only after the winning invention has been proved to be a commercial success.

Thomas A. Edison was the first man to win the Adelskold Medal for his invention of the phonograph and the electric light.

■ ■

Increased Gas Rates For Pennsylvania Counties

The Peoples Natural Gas Co., Pittsburgh, Pa., recently announced an increase in rates for small consumers in 11 Western Pennsylvania counties.

The Superior Court granted the increase but ordered the company to post bond to refund the increases to consumers in case the company fails to prove that the rates are justified at a rehearing before the PUC.

■ ■

Central Wisconsin Gas Co. Applies To Issue Bonds

Central Wisconsin Gas Co., Waupaca, Wis., has applied for permission to issue $85,000 of 5% first mortgage bonds and 8000 shares of common stock with no par value. The funds will be used to bring about a merger with Southwestern Wisconsin Gas Co., Sparta, Wis., rendering public utility gas service at Sparta and Tomah.

■ ■

Eldorado Gas Line Sold

The Southern Oklahoma Utility Co. has sold its natural gas line in Eldorado, Okla., to H. L. Flanagan and associates of Mobeetie, Texas. Ted Daniels has been made manager of the Eldorado Gas Co., Eldorado, Texas, which is a part of the Southern Oklahoma Utilities Co. that was sold.

64 YEARS PURIFICATION EXPERIENCE at your Service

For more than 64 years this organization has been solving purification problems for gas companies thruout the country. This broad experience, plus daily work in the field, enables our engineers to render a valuable advisory service in connection with the proper handling of purification materials.

No matter how complex — how "different" — your problem may be, it's a safe bet that Connelly engineers can solve it. Why not consult Connelly — today? There's no cost or obligation.

Connelly IRON SPONGE

MADE IN U.S.A.
100% American Materials

CONNELLY IRON SPONGE & GOVERNOR CO.
CHICAGO, ILL. — ELIZABETH, N. J.

BUTANE-PROPANE *News*—1709 West Eighth St., Los Angeles, Calif.

The only publication devoted to the Liquefied Petroleum Gas Industry.
Enter my subscription to start at once

BUTANE-PROPANE News

for 3 Years at $2.50

SUBSCRIPTION RATES: United States, Canada, Mexico and Central American countries (in advance), three years $2.50; all other countries, $3.00 per year.

Name.....Position.....
Company.....
Address.....
City.....State.....
☐ Check enclosed ☐ Send bill

Appalachian Meter School Announces Aim of Course

THE three-day course of the Appalachian Gas Measurement course, to be held in Morgantown, W. Va., August 19-21, was announced by R. S. Reed, Jr., chairman of the publicity committee, recently.

RAY W. HITCHMAN

The aim of the short course, according to Ray W. Hitchman, superintendent of measurement for United Fuel Gas Co., Charleston, W. Va., is to present, discuss and illustrate the various problems of measurement and control of gas. To do this the committee has arranged for classes covering a wide range of specific problems with instructors experienced in their solution.

■ ■

Fourteenth Annual Power Show Dated For December

Charles F. Roth, president of the International Exposition Co., will manage the Fourteenth National Exposition of Power and Mechanical Engineering which will be held at Grand Central Palace, New York, N. Y., December 2-7. Nearly 250 concerns have engaged exhibit space.

Attendance is limited by personal registration and is confined to those executives, engineers and operating men who are interested in equipment for the generation, distribution and utilization of power. An analysis of registrations at the 1938 exposition reveals an attendance of 42,661.

■ ■

Southern Union Employes Receive Safety Instructions

As part of its safety program, the Southern Union Gas System has recently inaugurated the practice of putting safety instruction cards in the envelopes containing payroll checks for employes whose regular duties are more or less dangerous. Each card covers some phase of safety regulation, such as: gas leaks (what to do); gas and electric meter readers; gas asphyxiation; falling hazards; sunstroke; how to put out a clothing fire.

■ ■

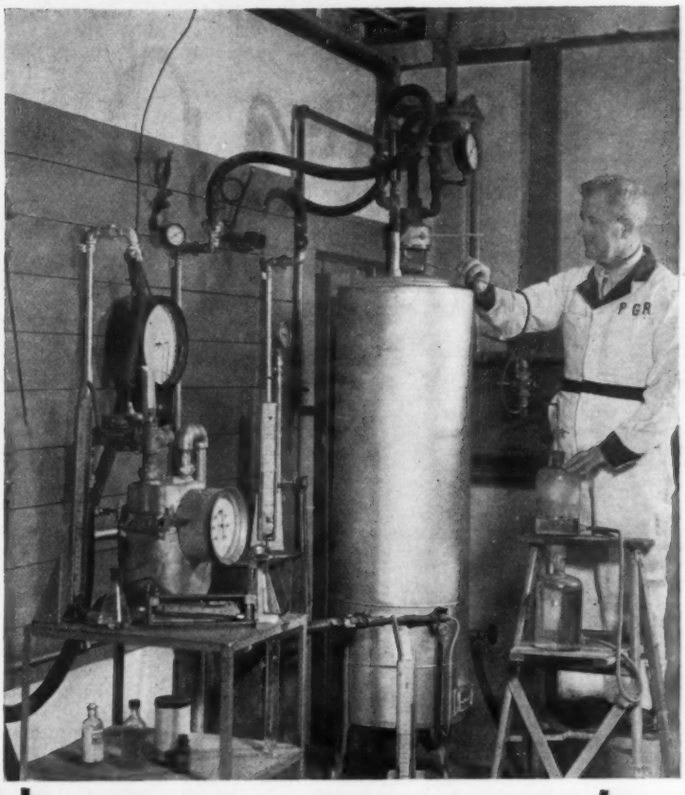
American Stove Company Releases Film on Gas

The American Stove Co., New York, N. Y., has released to dealers and utilities a new sound slide film on the history of gas. The film consists of two sections. The first dramatizes the history of gas as a fuel; the second is a short drama comparing old-fashioned stoves to the modern CP range. The show runs about 30 minutes, and the material included in it has been reproduced in booklet form.

■ ■

Gas Wonderland Visitors Presented With Buttons

As an added means of focussing public attention on "Gas Wonderland," visitors to the gas industries' exhibit at the New York World's Fair are presented with a lapel button that has a blue background with white lettering superimposed over a red, white and blue flame. Countless fair-goers are wearing these buttons.



Advancement

PGR

"PACIFIC" research and engineering account for many important contributions to greater efficiency in gas heating equipment and the consequent broadening of the market for appliances and increased use of gas. Pioneer in the field, a gas appliances "specialist" rich in experience covering 27 years, "Pacific" continues to build on a sound, time-tested base, progressively improves its products. In the consideration of gas heating equipment, self interest requires appraisal of the "Pacific" Line which includes everything from Radiant Heaters to big, streamlined Forced-Air Units for winter air conditioning and summer ventilation.

Pacific Gas Radiator Company, Huntington Park, California

Pacific

27 Successful Years and still growing!

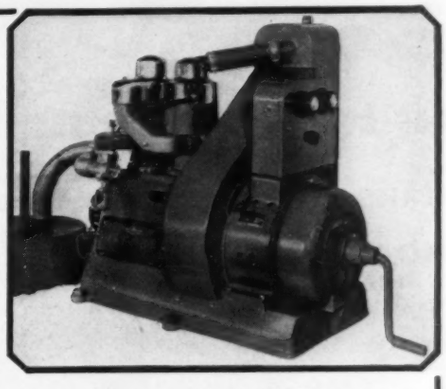
G-8

JACOBS

SPECIAL CATHODIC UNIT

Maximum Protection at Minimum Costs!

Designed exclusively for cathodic protection of pipe line. Manufactured completely in our factory. Operates on natural gas or gasoline. Few moving parts—no valves, gears, belts or pumps to break down. Positive lubrication and temperature control. Lowest operating and maintenance costs on record. *Unconditionally guaranteed for one year!*

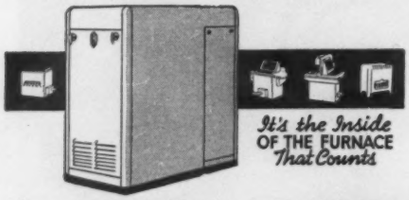


Write at once for complete details!

The JACOBS WIND ELECTRIC CO., Inc.

PIPE LINE DIVISION MINNEAPOLIS, MINN.

SETS THE PACE FOR CAREFREE HEATING



New P.A.C. by FRASER

High efficiency . . . silent, economical operation . . . sturdy construction and modern styling combine to make P.A.C. (Package Air Conditioning) the finest forced air unit on the market.

P.A.C. is completely self-contained. Its ripple enamel finish delights the eye. Its sound engineering and fine materials assure long life and economical heating comfort.

Ease of connecting cold air returns, complete assembly and wiring of controls, plus many other time-saving features simplify installation. A size for every need.

Fraser design and quality build customer satisfaction . . . dealer profit

Write for Illustrated, Specification-Folders

H. R. Basford Co. *Distributors* San Francisco - Los Angeles

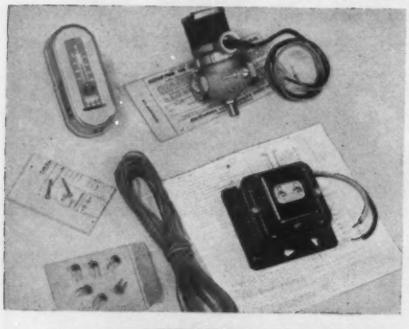
Fraser Furnace Co. *Manufacturers* Stockton, Calif.

OTHER FRASER UNITS

Basement Furnaces - Cabinet Furnaces
Single and Double Wall Furnaces
Tuckaway and Floor Furnaces - Console Heaters
Winter Air Conditioning Systems

FRASER
GAS HEATING EQUIPMENT

DEPENDABLE
Automatic GAS HEAT
WITH



SERIES K
GAS CONTROL PACKAGE SET

Includes:

SERIES A SOLENOID VALVE
Quiet in Operation

MODEL 200 THERMASTER
Snap-Acting Heat-Anticipating Room Thermostat

TRANSFORMER, WIRE, FITTINGS

●

For Complete Information Write:

MILWAUKEE GAS SPECIALTY CO.
MILWAUKEE - WISCONSIN

MODERN *Products*

Heavy Duty French Range

Sullivan Valve and Engineering Co., 910 South Arizona St., Butte, Montana.

Description: A new heavy duty range of French type that can be installed as a single unit or in multiples, with as many ovens as desired. It is built on the job from fabricated parts furnished by the manufacturer. The one-oven unit is 5 ft. 11 in. long, 39-in. wide and 32-in. high, requiring 700 brick for its installation. This area increases according to the number of ovens; the six-oven assemble is 17 ft. 7 in. long, 39-in. wide and 32-in. high, requiring 2500 common brick. Steel casing can be furnished to hide the brick, or tile faced brick can be used. Heavy cast iron top plates are furnished for even heat distribution and constant retained temperature. The oven is heavily insulated. This range is designed for large establishments and can be fired by gas or by oil or stoker.

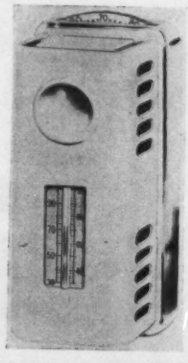
■ ■

Thermostat With Dial Stop

White-Rogers Electric Co., 1209 Cass Ave., St. Louis, Mo.

Model: Type 176 Thermostat.

Description: A new type line voltage thermostat designed so that when a unit heater or furnace is installed in a store or similar location, and the control of the temperature setting is in the hands of someone other than the person paying for the heat (the building owner) the adjustable stop to limit the maximum temperature may be set. It accomplishes this by means of a stop that may be adjusted only after removing the instrument from the wall. The thermostat may be set up to "summer" without disturbing the winter temperature stop. The "S" on the dial projects through the side of the case providing a reminder that the fan should be turned off at closing time.



■ ■

Gas Food Warmer

Wesley K. Nash Co., St. Louis Mart Bldg., St. Louis, Mo.

Model: Senior Thurmaduke.

Description: A food-warming table that distributes heat by sectional radiation plates instead of the water jacket now found in steam tables. Thus food is heated directly, and sections may be used as needed. The sectional control saves gas, allows the correct temperature for individual foods. It is claimed that the Thurmaduke operates at about a third of the expense of the steam table, and a tenth of the expense of electric equipment. Additional features of the table include an insulated body of baked enamel in a neutral light color; die-stamped, stainless steel top plates that are precision-fit and interchangeable; standardized parts and extras; close-grained carving board of Michigan maple; and bell-shaped adjustable feet to obtain levelness on uneven floors.

■ ■

Pittsburgh Meter Co. Uses Service Truck in Midwest

As a service and convenience to customers in the Midwest, the Pittsburgh Equitable Meter Co. and subsidiary, the Merco Nordstrom Valve Co., now have in operation, from their Chicago office, a completely-equipped field service truck.

This truck is fitted with the necessary tools, lubricants and test apparatus to handle properly the field maintenance of EMCO and Nordstrom products. It is in charge of Paul Payton, service engineer.

Captain A. E. Higgins, sales manager, announced that a similar unit has been ordered for use in the Mid-Continent area, to operate out of the Tulsa office and that additional service trucks would soon be used in other sections of the country.

■ ■

Leo A. Sommar, Assistant Secretary of U.G.I., Passes

Leo A. Sommar, assistant secretary of The United Gas Improvement Co., Philadelphia, Pa., died at his home in Germantown, Philahelphia, recently at the age of 55.

Mr. Sommar entered the employ of The United Gas Improvement Co. in September, 1902, in the accounting department and was elected assistant secretary in 1929. He was also assistant secretary of most of the subsidiaries of the company.

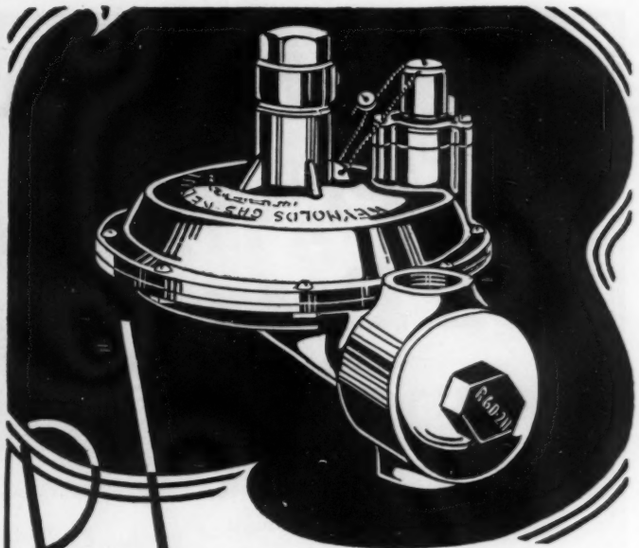
Tubing Problem?

Let Bundy Engineers Help You

Bundy's complete engineering and research facilities are at your disposal. There is no obligation.

BUNDY TUBING

DETROIT



Performance

REYNOLDS has nearly half a century of successful experience in the Gas Control Field, working out, designing, building and testing gas regulators, and the result: More than a million regulators in use throughout the world, meeting all requirements and giving successful performance.

REYNOLDS Service Regulators are built to meet the specific requirements necessary in service regulation. They are guaranteed to give the high quality of performance you demand over years of operation with a minimum upkeep. Below are a few characteristics of the different Models 10, 20, and 30.

3 GREAT SERVICE REGULATORS

MODEL 10 . . .

Dead Weight Adjustment or Spring Type Adjustment, without Mercury Seal, with Mercury Seal or with Dead Weight Seal. Diaphragm operated spring adjusted relief valve built in the top obtainable in the Spring Type Adjustment only. Made with removable spring. All working parts accessible and interchangeable without removal from pipe line.

MODEL 20 . . .

Dead Weight or Spring Type, with or without Mercury Seal, or Dead Weight Safety Seal. All working parts are so accurate as to permit complete interchangeability in shop.

MODEL 30 . . .

For Horizontal or Vertical Connections, with Removable Valve Pockets. Dead Weight Adjustment or Spring Type Adjustment. With Mercury Seal, without Mercury Seal, or Dead Weight Seal. Diaphragm operated spring adjusted relief valve built in the top obtainable in Spring Type Adjustment only. Made with removable spring.

GAS CONTROL SINCE 1892

REYNOLDS GAS REGULATOR CO

ANDERSON INDIANA U.S.A.

LIQUID NATURAL GAS PLANTS FOR PEAK LOADS

(PATENTED)

The method of distributing a gas which comprises liquefying the portion of the gas delivered through the transmission line in excess of the momentary demand of the distributing system, storing the liquefied gas in the liquid condition, regasifying the liquid gas at times of increased demand and delivering the gas to the distributing system.

The Gas Machinery Company

CLEVELAND OHIO

Why Klixon Controls are Better for all Gas Heaters

Klixon thermal gas valves are disc operated. You get no solenaid troubles such as humming, sticking or chattering. And Klixon Room Thermostats are also disc operated—contain no fussy, troublesome parts—nothing that can be affected by vibration; nothing to cause radio interference. Standardize on these simple, effective controls. Valves — standard sizes. Thermostats — in many attractive finishes. Complete packaged sets.

KLIXON

SPENCER THERMOSTAT CO.
808 FOREST ST. ATTLEBORO, MASS

Jurisdiction Disclaimed by FPC in Kentucky Case

DISMISSING "for want of jurisdiction" all proceedings respecting the sale of natural gas by the Columbian Fuel Corp., Shamrock, Texas, to the Warfield Natural Gas Co., Charleston, W. Va., in Kentucky, the Federal Power Commission concluded that "it was not the intention of Congress to subject to regulation under the Natural Gas Act all persons whose only sales of natural gas in interstate commerce, as in this case, are made as an incident to and immediately upon completion of such person's production and gathering of such natural gas and who are not otherwise subject to the jurisdiction of the commission."

The question before the commission in this case is whether the Natural Gas Act confers on the FPC jurisdiction over a company engaged solely in the production and gathering of natural gas when such company is also engaged in the sale of gas in interstate commerce.

■ ■

Johns-Manville Executive Dies at San Francisco

Walter R. Jones, industrial sales manager of the Pacific Coast territory of Johns-Manville, New York, N. Y., died July 16 after a short illness. Mr. Jones, who was 59 years old, was a life-long resident of San Francisco.

Born in 1881, Mr. Jones was graduated from St. Mary's College at Oakland, and shortly thereafter, began his 35-year career with Johns-Manville as a salesman in the industrial materials department. He was a member of the J-M Quarter Century club, his company's honor society for employes with the organization for 25 years or longer.

■ ■

Raymond F. Walter, Builder Of Boulder Dam, Passes

Raymond F. Walter, chief engineer of the Federal bureau of reclamation in western states, and builder of Boulder Dam, died July 1, at the age of 67.

Mr. Walter joined the bureau of reclamation in 1903. In 1924 he was made chief engineer, and as such he had charge of the Boulder Dam, Grand Coulee Dam, and other projects. His home was in Denver, Colo.

Sinclair O. Harper was named acting chief engineer by Secretary Ickes of the Interior Department.

■ ■

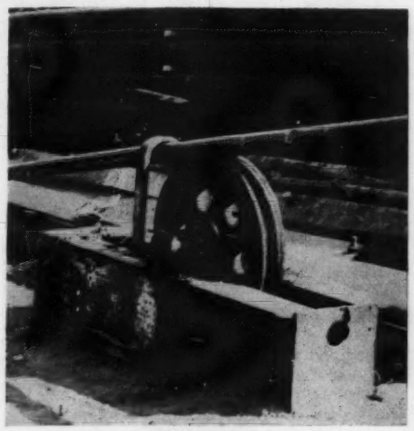
Southern California Gas Co. Employe Succumbs July 7

Michael J. Callahan, general street foreman, Southern California Gas Co., Los Angeles, Calif., died at his home in Los Angeles July 7. Born in Ireland in 1866, Callahan came to Los Angeles in 1911 and entered the service of the former Los Angeles Gas and Electric Co. in 1919. He has held the position of general street foreman in Southern California Gas Co. since the merger of that company with the Los Angeles Gas and Electric in 1937.

■ ■

Michigan Convention Held

The Michigan Gas Association held its annual convention at Grand Hotel, Mackinac Island, Mich., July 8-10, according to Albert G. Schroeder, secretary-treasurer of the association.



An old crown block and a loop of heavy strap make a one-man pipe straightener, both quick and accurate on pipe up to 2-in.

Crown Block Pulley Makes Straightener For Small Pipe

PIPE up to 2 in. in diameter is usually hand straightened during reclamation or reconditioning, as the use of machines for this work is too slow to be efficient. A straightener for this work can be built up from an old crown block pulley and part of the frame, with a heavy strap in the form of an inverted "U" bolted or welded in line with the pulley and close to it.

Pipe passed under the loop of the strap can be sighted as it rests in the groove of the pulley, and is supported on two sides when pressure is applied at the free end of the pipe. Force for straightening is applied along the arc of the pulley rim, instead of being concentrated at one point, and gradual elimination of the irregularities is thus obtained without overstressing the metal at any one point.

The free rolling of the pulley aids in quick spotting of bends and offsets for straightening. By raising the free end slightly so as to free loop contact, the pipe may be run in or out readily and at the same time rotated between the sides of the groove without requiring force to maintain its alignment in the straightening device.

■ ■

Richmond Gas Corp Seeks To Buy Indiana Plant

Proposing to issue $400,000 in first mortgage bonds, the recently organized Richmond Gas Corp. filed a petition with the Public Service Commission for authority to purchase the plant at Richmond of the Indiana Gas Utility Co., Terre Haute, Ind., for $550,000.

■ ■

Bond Issue Voted For Scott

At a special election in Scott, La., the voters recently voted a bond issue for the city to secure a gas plant, according to press reports. The date when construction will begin has not yet been announced.

LOOK AT THE TEN FINE FEATURES

of the quick-selling

SUNBEAM

Series HL Gas-Fired Air Conditioner

1. **Beauty**—Exterior jacket made of heavy steel finished in smart green baked enamel.
2. **Skillful Construction**—Unusually well built and factory assembled in two easily coupled, compact units for quick, convenient installation.
3. **Patented Heating Elements**—Made of individual cored cast iron sections, assembled as a single, highly efficient gas-tight heating unit requiring only *one* fuel-saving pilot.
4. **Efficient Blower and Motor**—Ample size with adjustable speeds. Specially designed for air conditioning installation. Quiet and economical in operation.
5. **High Quality Filters**—Unusually efficient—have large filtering area. Throw away type.
6. **Scientifically Designed Burner**—For manufactured gas the famous Ensign-Reynolds Ribbon Burner provides quiet, trouble-free operation plus exceptional flexibility and efficiency. For natural gas the tried and proved cast iron drilled port type is employed.
7. **Highest Quality Controls**—Two combinations available—either Detroit Lubricator or Minneapolis-Honeywell. Both famous for dependability, efficiency and long life. Easily accessible.
8. **Automatic Humidifier**—Rugged all metal float type with ceramic evaporating plates set in vitreous enamel pan. Quality built for efficient service.
9. **Nationally Advertised**—Featured in five national magazines and over 1,000 newspapers this Spring.
10. **Backed by the Best Known Name** in heating and plumbing — American Radiator & Standard Sanitary Corporation.

AMERICAN HEATING EQUIPMENT COSTS NO MORE THAN OTHERS

THE Sunbeam Series HL GAS-FIRED Air Conditioner is a typical example of the plus advantages of *every product* in this complete line. No wonder today more Sunbeam Air Conditioners are installed than any other make!

This fine GAS-FIRED Air Conditioner and the series H, SL and SU are specially suitable for small homes of all types. They combine low-cost, skillful, compact design, operating economy and handsome appearance. They can help you create GAS-FIRED Air Conditioning sales and profits now! For complete facts write to us.

Visit our building at the New York World's Fair. Ask for Mr. Frank Stubbs, our Exhibit Manager

AMERICAN RADIATOR & Standard Sanitary

New York CORPORATION Pittsburgh

Cast Iron & Steel Boilers & Furnaces • Radiators • Plumbing Fixtures & Fittings • Air Conditioners • Water Heaters Heating Accessories

Copyright 1940, American Radiator & Standard Sanitary Corporation

GAS—1709 W. 8th Street, Los Angeles, California

Yes! SEND ME GAS

for 3 Years at $2.00

SUBSCRIPTION RATES: United States, Canada, Mexico and Central American countries (in advance), three years $2.00; all other countries, $3.00 per year.

Name..... Position.....

Company.....

Address.....

City..... State.....

☐ Check enclosed ☐ Send bill

Natural Gas Plays Important Role in Bringing New Industries to Texas

THE industrial department of the Lone Star Gas Co., Dallas, Texas, has recently completed a survey that shows in the past year more than 200 industrial and manufacturing plants have been established in the Texas and Oklahoma territory served by the company.

Towns in which the new businesses have been established include Bonham, Sweetwater, Cisco, Electra, Garland, Wichita Falls, McKinney, West Weinert, Greenville, Midlothian, Dallas, Fort Worth, and a number of other towns of the 300 served by the Lone Star Gas Co. in Texas and Oklahoma.

Largest of the new manufacturing plants are the Byer-Rolnick Hat Co. at Garland; a million-dollar soap factory at Dallas; and two large plants at Fort Worth.

Products of the new plants are soap, yeast, beverages, batteries, furniture, roofing products, clothing, hats, foods, meats, ice, machinery, ice cream, etc.

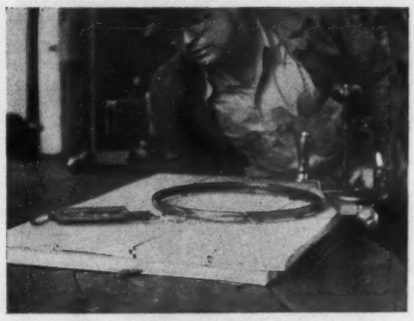
Abundance of natural gas and raw materials is said to have brought many of the new industries to that part of the country. The biggest industrial construction project started in Dallas in several years got under way recently with the starting of a $1,000,000 soap factory of the Proctor & Gamble Manufacturing Co., which already has a large oil and shortening plant in the city.

Assured for Dallas also is the $400,000 Fleischmann's yeast plant for which Standard Brands, Inc. has purchased a four-acre site. Actual construction is scheduled to start next fall or in the spring of 1941.

The Willard Storage Battery Co. is spending $75,000 on expansion of its plant and the installation of new equipment.

More than 134 new plants were established in Dallas during the past year, including the Kroehler Manufacturing Co., Campbell-Taggart, Inc., the Dallas Machine & Engineering Works, Leghorn Roofing Products, Inc., Link Belt Co., and the Conro Manufacturing Co.

Fort Worth has acquired 40 new plants and factories during the year. They include the American Asphalt Roofing Corp. of Kansas City, which will establish a branch plant, and the Container Corp. of America, which will begin operating a paper-board manufacturing plant soon.



Clamped to the platform, the drill press serves to hold tension on wire compressing piston ring while spring balance measures spreading force.

The Use of a Hand Drill To Compress Piston Rings

COMPRESSING the big piston rings used in stationary engines to the proper gap width for measuring the tension or opening force in the ring is a job which can be done with difficulty, if at all, by hand. In a 10-in. ring, for instance, the force tending to open the gap should be from 55 to 65 lbs. For this job a hand drill, with a stub of 3/8 in. bolt in the chuck as mandrel, serves admirably for winding up the wire which is taken one turn around the circumference of the ring. By clamping the drill to one side of the bench, and using the lock for holding the chuck when changing drills, it is possible to close the gap to the desired dimension, and then to measure the ring for diameter, as well as to determine the amount of tension the ring has—simply by tying-in a spring balance in the wire.

Tension measured by means of a wire and spring balance is approximately one-third that required to force the ends of the ring to the proper gap measurement, if the ring be closed by applying pressure at right angles to the gap — but either is an accurate indicator of the force remaining in the ring to hold it in perfect contact with cylinder wall.

■ ■

Calaveras Cement Co. Lays Plans For Gas Service

The Calaveras Cement Co. has placed an order with the California Corrugated Culvert Co., of Berkeley, for some 1800 tons of 10-gage steel sheets to be welded into a pipe line to convey natural gas from the Rio Vista field to its cement plant at San Andreas.

The Bishop Oil Co., affiliated with the Calaveras company, has brought in one gas well in the Rio Vista field. The company plans to drill other wells, and it is hoped to develop sufficient natural gas to supply the cement plant with fuel. At the present time oil is burned.

The company announced, however, that for the present only the part of the pipe line adjacent to the cement plant will be laid, pending fuller development of the gas supply.

GASAIR

GASAIR MIXERS AND VAPORIZERS

150 to 50,000 C. F. H. Capacity

●

GASAIR VAPORIZERS

For Straight Vapor Installations

ELIMINATE UTILITY & INDUSTRIAL SHUT-OFF

"The Only Complete Gas-Making Unit Operating Without Outside Power"

●

GASAIR CORPORATION

John K. Heller, Pres.

155 Sansome Street, San Francisco

Telephone YUkon 1435

STANDBY

ROBERT J. KUHN

Consulting Engineer

CATHODIC PROTECTION

Transmission Lines — City Networks

Electrolysis — Corrosion Surveys

Nationwide Service

1644 Canal Bank Bldg. New Orleans, La.

GEORGE A. BURRELL

Petroleum and Gas Engineer

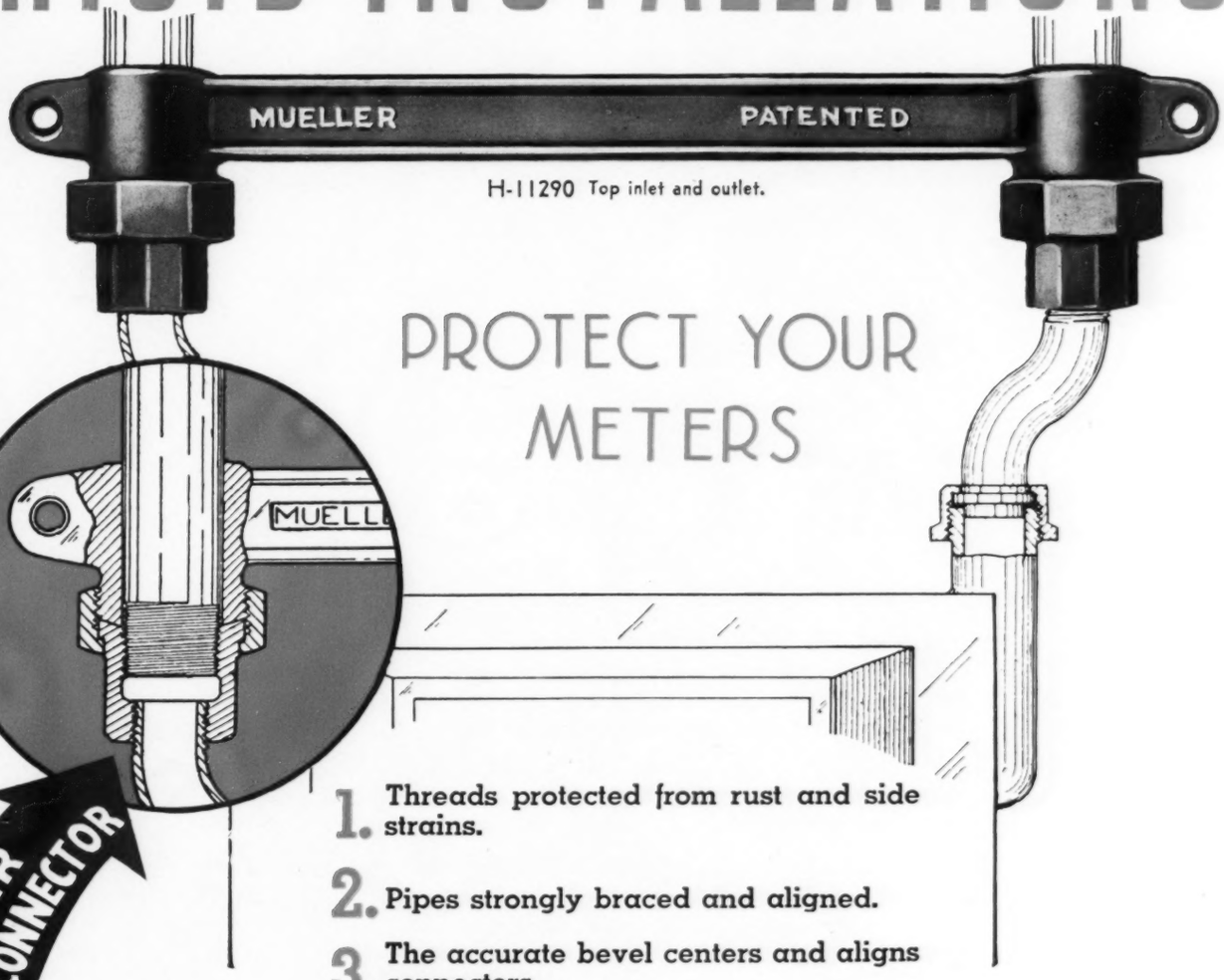
Design—Construction—Reports

■

Suite 1909
20 Pine Street
New York City

1936-42 5th Avenue
Pittsburgh, Pa.

RIGID INSTALLATIONS



H-11290 Top inlet and outlet.

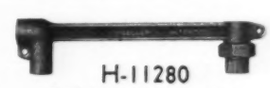
PROTECT YOUR METERS

MUELLER BEVEL CONNECTOR

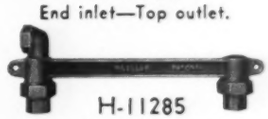
1. Threads protected from rust and side strains.
2. Pipes strongly braced and aligned.
3. The accurate bevel centers and aligns connectors.
4. Only two connections—no union joints or gaskets.
5. Accurate threading and precise dimensions.

Mueller's new achievement in meter protection is the BEVEL CENTERING CONNECTOR. The bevel face on the bar is pulled together with the bevel connector at the pipe by means of a heavy hexagon nut. This forms a rigid connection of accurate registration and alignment which will withstand the strain of shifting or settling pipes because the threaded part, which is the weakest section of the pipe, is braced by the walls of the meter bar.

There are Mueller Rigid Bar Meter Connections for all types of piping arrangements. Write us for full information concerning your requirements.



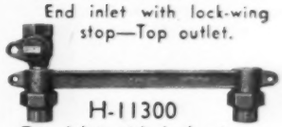
H-11280
End inlet—Top outlet.



H-11285
Elbow inlet—Top outlet.

H-11287
U-type inlet—Top outlet.

H-11295
End inlet with lock-wing stop—Top outlet.



H-11300
Top inlet with lock-wing stop—Top outlet.

MUELLER CO.

DECATUR, ILLINOIS

NOW IS THE TIME . . .

TO PREPARE FOR YOUR FALL HOUSEHEATING REQUIREMENTS!

SPRAGUE No. 4 Meters

MEET THOSE REQUIREMENTS

CAPACITY:

600 cu. ft. ½"

1350 cu. ft. 2"

Write for No. 22 Bulletin

THE SPRAGUE METER CO.

BRIDGEPORT — **CONNECTICUT**